

UNITED STATES DEPARTMENT OF COMMERCE

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WEATHER BUREAU

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MONTHLY WEATHER REVIEW

OCTOBER 1946

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CHARTS I-XI. Chart VII, Snowfall, omitted until November.



CORRECTION

MONTHLY WEATHER REVIEW, July 1948, vol. 72, p. 127; Under heading of Middle Pacific Coast in the Climatological Table, heights of instruments for Red Bluff, Calif., should read 253, 5, and 26 feet for heights of barometer, thermometer, and anemometer, respectively.

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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR OCTOBER 1946

AEROLOGICAL OBSERVATIONS

[For description of change in Table 1 and charts, see REVIEW, January 1946, p. 6]

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meter, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1946

STATIONS AND MEAN SURFACE PRESSURES																													
Standard pressure surface (mb.)	Albany, N. Y. (1,007.8 mb.)				Albuquerque, N. Mex. (836.2 mb.)				Apalachicola, Fla. (1,016.8 mb.)				Atlanta, Ga. (984.6 mb.)				Auburn, Calif. (956.3 mb.)				Big Spring, Tex. (926.0 mb.)				Bismarck, N. Dak. (962.8 mb.)				
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	
Surface	31	93	9.9	83	31	1620	14.7	39	27	5	20.6	81	31	300	14.9	79	31	501	13.9	50	30	774	19.0	66	30	505	4.9	73	
1,000	31	156	12.5	78	31	73	(*)	---	27	149	20.7	75	31	167	(*)	---	31	119	(*)	---	30	103	(*)	---	30	105	(*)	---	
950	31	590	10.9	71	31	525	(*)	---	27	592	18.5	71	31	608	16.3	66	31	559	15.1	47	30	550	(*)	---	30	525	(*)	---	
900	31	1,035	8.5	70	31	994	(*)	---	27	1,054	15.9	69	31	1,063	13.6	63	31	1,014	13.4	42	30	1,019	18.4	63	30	970	4.7	64	
850	31	1,506	6.8	63	31	1,481	(*)	---	27	1,538	13.9	59	31	1,544	11.6	54	31	1,492	10.2	41	30	1,508	16.4	60	30	1,434	2.0	65	
800	31	2,003	4.6	60	31	1,993	13.4	37	27	2,048	12.4	45	31	2,050	10.7	45	31	1,993	6.6	43	30	2,023	14.4	53	30	1,921	0.2	63	
750	31	2,535	2.2	55	31	2,534	9.4	40	27	2,591	10.3	43	31	2,590	8.7	41	31	2,534	3.4	42	30	2,562	11.4	46	30	2,441	-1.9	61	
700	31	3,082	-0.3	54	31	3,100	5.1	44	27	3,158	8.0	32	31	3,153	5.9	36	31	3,076	0.3	39	30	3,139	7.7	43	30	2,983	-4.6	59	
650	31	3,678	-3.3	52	31	3,703	0.9	50	27	3,771	4.8	---	31	3,760	2.7	---	31	3,667	-3.1	37	30	3,747	4.4	40	30	3,596	-7.8	59	
600	30	4,299	-7.1	54	31	4,339	-3.2	52	27	4,413	0.8	---	31	4,399	-1.1	---	31	4,295	-7.3	37	30	4,393	0.3	34	30	4,183	-11.1	60	
550	29	4,975	-11.3	48	31	5,022	-7.4	48	27	5,107	-3.5	---	31	5,090	-5.2	---	30	4,970	-11.5	35	29	5,066	-4.0	---	29	4,846	-15.0	55	
500	29	5,698	-15.7	44	30	5,764	-11.9	43	27	5,852	-8.3	---	31	5,830	-9.9	---	30	5,693	-16.1	30	29	5,832	-8.9	---	29	5,590	-19.6	49	
450	29	6,493	-20.8	50	30	6,564	-17.0	---	27	6,698	-13.6	---	31	6,641	-15.4	---	30	6,482	-21.6	---	26	6,652	-14.1	---	29	6,341	-24.4	---	
400	29	7,346	-26.8	---	30	7,433	-23.2	---	27	7,541	-20.2	---	31	7,512	-21.8	---	30	7,336	-27.3	---	25	7,530	-20.7	---	28	7,191	-30.1	---	
350	28	8,285	-34.1	---	30	8,396	-30.4	---	26	8,517	-27.2	---	31	8,481	-29.1	---	30	8,283	-34.4	---	24	8,502	-27.5	---	27	8,130	-36.4	---	
300	28	9,347	-41.7	---	30	9,474	-38.4	---	29	9,606	-35.1	---	31	9,564	-37.1	---	30	9,343	-41.9	---	24	9,593	-35.4	---	25	9,184	-42.9	---	
250	28	10,500	-50.0	---	30	10,705	-46.7	---	26	10,855	-44.1	---	31	10,799	-46.2	---	30	10,555	-50.0	---	22	10,839	-44.2	---	21	10,420	-48.6	---	
200	27	11,990	-57.9	---	26	12,151	-55.8	---	25	12,313	-54.6	---	30	12,253	-55.9	---	27	11,983	-56.2	---	17	12,314	-53.7	---	14	11,893	-53.4	---	
175	25	12,825	-60.2	---	20	13,009	-59.4	---	23	13,153	-60.0	---	29	13,097	-60.5	---	26	12,827	-58.8	---	15	13,169	-59.2	---	12	12,743	-55.2	---	
150	20	13,767	-60.6	---	14	13,970	-63.1	---	21	14,096	-65.9	---	26	14,051	-65.9	---	23	13,783	-60.5	---	7	14,146	-60.0	---	7	13,723	-57.3	---	
125	14	14,897	-60.0	---	6	15,112	-66.0	---	12	15,186	-71.5	---	16	15,154	-69.9	---	12	14,877	-59.2	---	---	---	---	---	---	---	---	---	

Standard pressure surface (mb.)	Boise, Idaho (915.3 mb.)				Brownsville, Tex. (1,013.1 mb.)				Buffalo, N. Y. (992.5 mb.)				Burrwood, La. (1,016.5 mb.)				Caribou, Maine (994.2 mb.)				Charleston, S. C. (1,017.4 mb.)				Ciudad Victoria, Mexico (974.2 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	868	8.1	61	30	6	24.1	87	30	221	11.6	75	31	2	22.8	81	31	191	7.0	81	31	14	16.7	86	31	335	23.8	79
1,000	31	127	(*)	---	30	139	24.0	85	30	157	(*)	---	31	145	22.0	80	31	143	(*)	---	31	161	18.6	75	31	104	(*)	---
950	31	562	(*)	---	30	578	21.7	83	30	592	12.8	62	31	592	19.2	78	31	567	7.1	69	31	601	16.7	67	31	553	22.8	78
900	31	1,008	9.4	54	30	1,038	18.9	78	30	1,042	10.4	67	31	1,053	16.9	62	31	1,009	4.9	69	31	1,059	14.1	64	31	1,025	19.6	80
850	31	1,499	6.3	54	30	1,528	16.9	65	30	1,515	7.4	67	31	1,539	15.0	54	31	1,474	3.3	69	31	1,541	12.3	59	31	1,516	16.6	83
800	31	1,973	2.5	60	29	2,045	14.7	52	30	2,012	4.9	58	31	2,051	12.8	49	31	1,964	1.6	64	31	2,046	11.0	48	31	2,033	13.9	79
750	31	2,495	-1.2	67	29	2,595	12.3	46	30	2,540	2.1	55	31	2,595	10.6	36	31	2,486	-0.7	58	31	2,588	9.0	41	31	2,574	11.4	76
700	31	3,039	-4.6	66	29	3,106	9.7	40	30	3,091	-0.6	55	31	3,163	8.1	28	31	3,032	-3.0	60	31	3,153	6.5	32	31	3,150	8.8	64
650	31	3,622	-8.0	65	28	3,782	6.3	40	30	3,685	-3.5	50	31	3,776	5.0	---	31	3,618	-6.4	54	31	3,758	3.6	---	30	3,756	5.5	56
600	31	4,237	-11.3	60	28	4,431	2.7	39	30	4,309	-7.0	48	31	4,420	1.1	---	30	4,236	-9.2	44	31	4,404	0.1	---	30	4,412	1.9	53
550	30	4,902	-15.0	56	28	5,130	-1.3	33	29	4,985	-11.0	44	31	5,117	-2.9	---	30	4,903	-13.1	43	29	5,089	-4.0	---	30	5,105	-2.0	53
500	30	5,615	-19.6	56	28	5,884	-5.7	---	29	5,708	-15.5	41	31	5,863	-7.6	---	30	5,625	-17.3	---	28	5,842	-8.7	---	30	5,892	-6.5	52
450	29	6,392	-24.7	---	28	6,709	-10.8	---	28	6,505	-20.8	---	31	6,685	-12.9	---	30	6,416	-22.3	---	28	6,655	-14.2	---	29	6,680	-11.6	45
400	29	7,232	-30.9	---	28	7,596	-17.0	---	26	7,358	-27.0	---	31	7,565	-19.2	---	30	7,363	-28.3	---	26	7,533	-20.4	---	29	7,572	-17.3	44
350	28	8,161	-39.0	---	27	8,585	-24.2	---	25	8,316	-33.6	---	30	8,544	-25.4	---	29	8,202	-35.2	---	25	8,506	-27.4	---	29	8,556	-24.6	---
300	27	9,202	-45.7	---	26	9,688	-32.6	---	24	9,383	-41.1	---	30	9,641	-34.1	---	27	9,264	-42.4	---	25	9,597	-35.5	---	28	9,661	-33.1	---
250	23	10,373	-51.7	---	25	10,948	-42.2	---	23	10,605	-49.1	---	29	10,893	-43.5	---	27	10,476	-49.9	---	23	10,836	-45.6	---	28	10,916	-43.2	---
200	18	11,786	-56.0	---	25	12,410	-53.4	---	19	12,045	-55.8	---	27	12,356	-54.0	---	26	11,910	-55.1	---	23	12,286	-56.3	---	28	12,378	-55.3	---
175	17	12,642	-55.9	---	25	13,264	-59.7	---	17	12,891	-58.1	---	23	13,202	-59.4	---	22	12,745	-56.9	---	22	13,122	-61.2	---	28	13,217	-62.0	---
150	9	13,614	-64.8	---	19	14,207	-65.8	---	16	13,864	-61.0	---	12	14,167	-65.0	---	14	13,626	-66.5	---	21	14,073	-66.0	---	24	14,156	-68.6	---
125	5	14,806	-67.5	---	7	15,337	-70.9	---	8	15,009	-63.4	---	---	---	---	---	---	---	---	---	17	15,177	-69.5	---	11	15,253	-74.6	---
100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10	16,488	-70.0	---	---	---	---	---	

See footnotes at end of table.

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meter, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1946—Continued

Standard pressure surface (mb.)	Columbia, Mo. (988.0 mb.)				Dodge City, Kans. (922.5 mb.)				El Paso, Tex. (879.9 mb.)				Ely, Nev. (807.4 mb.)				Fort Worth, Tex. (991.2 mb.)				Glasgow, Mont. (936.7 mb.)				Grand Junction, Colo. (851.2 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity				
Surface	31	239	15.3	63	30	787	12.8	76	31	1,195	20.0	39	31	1,908	5.0	62	31	211	19.4	65	31	648	5.3	68	31	1,474	9.6	
1,000	31	135	(*)	---	30	100	(*)	---	31	73	(*)	---	31	116	(*)	---	31	134	(*)	---	31	106	(*)	---	31	108	(*)	---
950	31	579	15.8	58	30	537	(*)	---	31	534	(*)	---	31	550	(*)	---	31	581	(*)	---	31	531	(*)	---	31	555	(*)	---
900	31	1,030	13.3	58	30	995	13.5	66	31	1,003	(*)	---	31	1,012	(*)	---	31	1,040	16.2	62	31	975	6.4	63	31	1,012	(*)	---
850	31	1,509	10.8	55	30	1,476	12.6	58	31	1,493	19.5	37	31	1,482	(*)	---	31	1,525	13.8	58	31	1,439	2.2	65	31	1,485	9.3	46
800	31	2,013	8.7	45	30	1,983	11.0	50	31	2,011	15.6	40	31	1,983	6.0	58	31	2,035	11.8	51	31	1,925	-1.1	60	31	1,980	8.1	48
750	31	2,548	6.1	44	30	2,523	8.3	39	31	2,558	11.6	43	31	2,515	3.4	55	31	2,577	9.3	47	31	2,442	-3.4	61	31	2,521	4.3	52
700	31	3,106	3.0	41	30	3,085	4.7	38	31	3,128	7.7	44	31	3,065	-0.9	61	31	3,143	6.6	42	31	2,981	-6.4	61	31	3,075	0.1	59
650	31	3,704	0.0	39	30	3,686	0.9	37	31	3,733	3.7	39	31	3,657	-4.7	58	31	3,752	3.4	36	31	3,562	-9.8	63	31	3,667	-4.2	65
600	31	4,339	-3.9	38	30	4,324	-3.2	36	31	4,379	-0.7	42	31	4,279	-8.1	61	31	4,393	-0.3	35	31	4,170	-13.3	62	31	4,291	-8.3	60
550	31	5,022	-8.1	34	30	5,005	-7.8	39	31	5,068	-5.2	37	31	4,953	-12.2	55	31	5,085	-4.5	33	30	4,820	-17.7	59	30	4,958	-12.5	58
500	31	5,754	-13.0	38	30	5,740	-12.4	---	30	5,812	-9.8	---	31	5,672	-16.9	51	31	5,829	-9.3	---	30	5,529	-22.2	---	30	5,680	-17.1	50
450	30	6,554	-17.9	34	30	6,543	-17.6	---	29	6,621	-15.4	---	30	6,462	-22.4	---	30	6,644	-14.6	---	30	6,299	-27.5	---	30	6,467	-22.8	---
400	30	7,419	-24.0	---	30	7,408	-23.7	---	29	7,495	-21.7	---	30	7,314	-28.3	---	28	7,523	-20.7	---	30	7,133	-33.3	---	30	7,315	-28.5	---
350	30	8,380	-31.0	---	30	8,370	-30.7	---	29	8,464	-28.8	---	30	8,258	-34.8	---	27	8,500	-27.7	---	28	8,050	-39.6	---	30	8,259	-35.1	---
300	30	9,455	-38.6	---	30	9,445	-38.6	---	28	9,546	-37.0	---	30	9,317	-41.5	---	26	9,589	-36.1	---	26	9,096	-46.5	---	30	9,318	-41.7	---
250	26	10,672	-47.1	---	30	10,674	-47.2	---	27	10,785	-46.1	---	30	10,534	-48.6	---	24	10,837	-45.0	---	22	10,307	-51.7	---	30	10,535	-48.3	---
200	25	12,119	-55.4	---	21	12,132	-54.4	---	27	12,233	-56.5	---	29	11,976	-56.4	---	20	12,313	-55.2	---	19	11,752	-54.1	---	27	11,975	-54.8	---
175	24	12,966	-58.7	---	16	12,969	-57.7	---	22	13,074	-61.2	---	25	12,809	-58.2	---	12	13,175	-59.8	---	15	12,622	-54.4	---	22	12,835	-57.2	---
150	16	13,950	-62.6	---	9	13,909	-59.5	---	11	14,038	-66.5	---	20	13,787	-59.7	---	20	13,787	-59.7	---	13	13,597	-55.5	---	16	13,800	-59.2	---
125	6	15,143	-66.0	---	---	---	---	---	9	14,930	-58.7	---	9	14,930	-58.7	---	7	14,127	-64.8	---	5	14,823	-56.2	---	14	14,942	-61.5	---

Standard pressure surface (mb.)	Great Falls, Mont. (884.6 mb.)				Greensboro, N. C. (988.9 mb.)				Hatteras, N. C. (1,018.7 mb.)				Havana, Cuba ¹ (.... mb.)				Honolulu, T. H. (1,013.2 mb.)				Huntington, W. Va. (969.1 mb.)				International Falls, Minn. (971.7 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity				
Surface	31	1,128	4.8	64	30	273	12.3	83	31	3	18.8	82	25	3	26.1	66	31	172	10.2	85	31	359	4.6	77				
1,000	31	112	(*)	---	30	178	(*)	---	31	162	18.0	80	25	118	24.7	68	31	165	(*)	---	31	122	(*)	---				
950	31	544	(*)	---	30	615	14.1	71	31	601	15.7	75	25	573	20.9	72	31	598	15.2	56	31	543	5.4	71				
900	31	991	(*)	---	30	1,067	11.4	68	31	1,058	13.2	72	25	1,033	17.4	75	31	1,051	12.1	55	31	994	3.4	69				
850	31	1,452	3.8	58	30	1,543	9.2	59	31	1,538	11.1	62	25	1,520	14.6	72	31	1,527	9.3	54	31	1,445	1.1	67				
800	31	1,943	0.7	60	30	2,044	7.4	48	31	2,043	9.7	47	25	2,032	12.9	85	31	2,028	6.8	47	31	1,931	-0.1	65				
750	31	2,459	-3.0	65	30	2,584	5.6	41	30	2,582	7.7	35	25	2,580	11.1	38	31	2,559	4.7	43	31	2,452	-2.0	60				
700	31	3,000	-6.5	68	30	3,136	3.8	35	30	3,142	5.2	32	24	3,145	8.5	---	31	3,115	2.2	40	31	2,992	-5.0	62				
650	31	3,580	-10.0	68	30	3,738	0.8	---	30	3,747	2.3	---	24	3,755	5.2	---	31	3,712	-0.6	38	31	3,577	-8.1	57				
600	31	4,190	-13.6	63	30	4,373	-3.0	---	30	4,386	-1.3	---	24	4,404	2.0	---	31	4,347	-4.0	39	31	4,190	-11.3	56				
550	31	4,850	-17.4	55	30	5,056	-7.2	---	30	5,074	-5.4	---	24	5,103	-2.2	---	31	5,026	-8.1	---	31	4,854	-15.2	56				
500	30	5,553	-22.2	---	30	5,793	-12.1	---	30	5,816	-10.0	---	24	5,851	-6.6	---	31	5,762	-12.8	---	30	5,572	-19.6	56				
450	29	6,329	-27.3	---	30	6,599	-17.8	---	30	6,626	-15.7	---	24	6,677	-11.9	---	31	6,558	-17.9	---	30	6,369	-24.4	56				
400	29	7,162	-33.1	---	30	7,462	-24.2	---	30	7,498	-22.0	---	24	7,555	-18.3	---	30	7,431	-24.2	---	30	7,196	-30.1	58				
350	28	8,092	-39.3	---	30	8,421	-31.4	---	28	8,472	-29.1	---	24	8,537	-25.8	---	30	8,391	-31.1	---	28	8,133	-36.5	---				
300	28	9,131	-46.8	---	30	9,494	-39.8	---	28	9,553	-37.3	---	23	9,635	-34.2	---	29	9,464	-38.9	---	27	9,187	-43.0	---				
250	27	10,323	-52.6	---	30	10,715	-49.3	---	26	10,777	-46.9	---	22	10,883	-43.9	---	28	10,694	-47.3	---	27	10,396	-49.6	---				
200	21	11,767	-54.5	---	29	12,155	-58.5	---	22	12,247	-54.8	---	18	12,342	-55.1	---	25	12,144	-55.9	---	20	11,857	-54.8	---				
175	20	12,622	-54.7	---	27	12,960	-61.8	---	17	13,094	-59.2	---	10	13,167	-61.0	---	20	12,988	-59.4	---	15	12,742	-56.4	---				
150	17	13,595	-54.1	---	23	13,947	-65.3	---	9	14,024	-61.6	---	---	---	---	---	14	13,937	-62.2	---	13	13,739	-57.7	---				
125	14	14,742	-56.6	---	14	15,037	-69.0	---	---	---	---	---	---	---	---	---	5	15,042	-64.2	---	---	---	---	---				

Standard pressure surface (mb.)	Joliet, Ill. (995.8 mb.)				Lake Charles, La. (1,016.4 mb.)				Lander, Wyo. (826.6 mb.)				Las Vegas, Nev. (946.1 mb.)				Little Rock, Ark. (1,008.1 mb.)				Mazatlan, Mexico (1,007.6 mb.)				Medford, Oreg. (970.3 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity				
Surface	31	178	11.7	77	30	5	19.7	87	31	1,696	4.2	67	31	574	17.1	38	31	79	15.4	78	31	14	28.0	72	30	401	11.2	70
1,000	31	142	(*)	---	30	146	21.4	78	31	111	(*)	---	31	95	(*)	---	31	147	(*)	---	31	79	27.2	72	30	147	(*)	---
950	31	578	14.1	61	30	594	18.9	72	31	546	(*)	---	31	540	(*)	---	31	591	17.1	59	31	537	24.2	68	30	582	11.4	65
900	31	1,030	11.4	59	30	1,053	16.4	67	3																			

See footnotes at end of table.

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meter, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1946—Continued

Standard pressure surface (mb.)	Tampa, Fla. (1,015.5 mb.)				Tatoosh Island, Wash. (1,012.8 mb.)				Toledo, Ohio (995.6 mb.)				Washington, D. C. (1,017.1 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	30	0	22.2	83	30	31	9.3	88	31	191	12.4	71	29	25	14.8	76
1,000	30	143	22.0	81	30	136	9.0	82	31	153	(*)	60	29	168	15.6	67
950	30	591	19.8	78	30	566	6.9	77	31	587	14.1	58	29	606	13.5	64
900	30	1,053	16.8	80	30	1,003	4.6	72	31	1,042	11.5	58	29	1,056	10.9	62
850	30	1,538	14.0	75	30	1,467	2.3	68	31	1,518	8.8	48	29	1,532	8.7	56
800	30	2,049	12.0	62	30	1,954	0.0	64	31	2,017	6.5	48	29	2,031	6.4	48
750	30	2,593	10.0	47	30	2,476	-2.6	63	31	2,547	3.8	43	29	2,565	4.2	42
700	30	3,159	7.6	36	30	3,013	-5.6	55	31	3,102	0.9	39	29	3,117	1.5	39
650	30	3,768	4.4	34	30	3,596	-9.3	53	31	3,698	-2.4	30	29	3,713	-1.4	40
600	30	4,413	0.7	34	30	4,206	-12.6	47	31	4,326	-5.9	29	29	4,345	-5.0	...
550	30	5,106	-3.2	29	30	4,860	-16.9	49	31	5,003	-9.6	29	29	5,024	-8.9	...
500	30	5,854	-7.7	29	30	5,566	-21.4	31	31	5,734	-13.7	29	29	5,756	-13.6	...
450	29	6,671	-13.1	29	29	6,344	-26.2	31	31	6,530	-19.1	29	29	6,555	-19.0	...
400	29	7,550	-19.6	29	29	7,178	-31.5	31	31	7,394	-25.1	29	29	7,418	-24.9	...
350	29	8,257	-27.1	29	29	8,111	-38.0	31	31	8,349	-32.4	29	29	8,375	-32.0	...
300	27	9,616	-35.5	29	29	9,145	-45.2	29	29	9,426	-40.2	27	27	9,446	-40.2	...
250	27	10,860	-44.8	21	21	10,374	-51.4	26	26	10,678	-48.2	27	27	10,667	-48.7	...
200	25	12,313	-55.7	13	13	11,790	-54.0	19	19	12,156	-56.8	25	25	12,108	-57.3	...
175	23	13,150	-61.4	8	8	12,616	-53.5	15	15	13,015	-60.1	21	21	12,955	-61.1	...
150	18	14,099	-66.7	...	...	...	...	13	13	13,997	-63.8	18	18	13,918	-64.3	...
125	9	15,192	-70.7	...	...	...	...	7	7	15,116	-67.1	9	9	15,084	-68.2	...

* Data not yet received.

* Temperature and relative humidity data for this level are not available or are available only for certain days. See note entitled "Change in Summarization of Radiosonde Data," p. 6, in the January 1946 issue of the MONTHLY WEATHER REVIEW.

NOTE.—All observations scheduled between 0300 and 0500, G. C. T. except at Mazatlan and Merida, where they are taken near 0300 G. C. T.

"Number of observations" refers to those of dynamic height only. (In a few cases temperature or humidity data may be missing for one or more standard pressure surfaces of some observations.) Relative humidity data are not published for standard pressure surfaces having a corresponding mean temperature below -20°C .

All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the values occurring below the operating range of the humidity element. For explanation of the adjustment see article entitled "Curve Method for Obtaining Monthly Means of Relative Humidity," p. 241, MONTHLY WEATHER REVIEW, December 1944.

None of the means included in these tables are based on less than 15 observations at the surface or 5 observations at a standard pressure level.

LATE REPORTS FOR HAVANA, CUBA

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meter, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1946—Continued

STATIONS AND MEAN SURFACE PRESSURES

Standard Pressure Surface (mb.)	January ¹ (.... mb.)				February (1,013.0 mb.)				March (1,011.2 mb.)				April (1,011.8 mb.)				May (1,000.2 mb.)				June (1,011.7 mb.)				July (1,011.4 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	27	50	22.0	84	31	50	22.3	80	30	50	23.6	78	31	50	24.6	85	29	50	24.9	88	30	50	26.0	84	30	50	26.0	84
1,000	27	163	21.4	83	31	147	21.9	79	30	152	23.1	77	31	131	24.4	84	29	152	24.8	87	30	151	25.8	82	30	151	25.8	82
950	27	613	18.4	82	31	596	19.0	75	30	601	20.6	75	31	584	22.7	77	29	606	22.6	81	30	606	23.1	78	30	606	23.1	78
900	27	1,099	15.6	81	31	1,055	16.1	74	30	1,064	18.0	68	31	1,050	19.8	75	29	1,073	19.7	78	30	1,073	20.4	73	30	1,073	20.4	73
850	27	1,552	12.9	74	31	1,540	13.7	66	30	1,552	15.3	61	31	1,541	16.8	73	29	1,564	16.5	78	30	1,565	17.2	74	30	1,565	17.2	74
800	27	2,060	11.0	56	31	2,049	11.1	55	29	2,064	12.7	54	31	2,056	13.7	72	29	2,079	13.7	73	30	2,081	14.0	71	30	2,081	14.0	71
750	27	2,601	8.8	41	31	2,591	9.2	42	29	2,604	9.9	44	31	2,602	10.2	71	29	2,625	10.6	67	30	2,627	10.8	65	30	2,627	10.8	65
700	27	3,165	6.0	30	31	3,156	6.6	31	29	3,174	6.8	40	31	3,170	7.3	62	29	3,193	7.2	65	30	3,196	7.5	59	30	3,196	7.5	59
650	27	3,769	2.9	...	31	3,762	3.2	...	29	3,784	3.5	33	30	3,783	4.1	57	29	3,806	3.8	68	29	3,809	4.1	54	30	3,809	4.1	54
600	27	4,414	-0.5	...	31	4,404	-0.8	...	28	4,424	-0.2	33	30	4,424	0.7	51	29	4,446	0.2	68	29	4,450	0.3	54	30	4,450	0.3	54
550	27	5,108	-4.5	...	31	5,097	-4.8	...	27	5,119	-3.8	...	30	5,120	-3.2	48	29	5,145	-3.5	64	29	5,148	-3.5	50	30	5,148	-3.5	50
500	27	5,847	-9.4	...	31	5,837	-9.4	...	27	5,862	-7.9	...	30	5,866	-7.8	47	29	5,889	-7.8	58	29	5,893	-7.7	50	30	5,893	-7.7	50
450	29	6,660	-15.5	...	31	6,650	-15.5	...	27	6,683	-13.2	...	30	6,684	-13.0	44	29	6,712	-12.6	59	29	6,713	-13.1	51	30	6,713	-13.1	51
400	25	7,531	-22.2	...	31	7,521	-22.5	...	27	7,562	-19.6	...	30	7,567	-18.9	52	28	7,592	-18.2	50	29	7,593	-19.1	55	30	7,593	-19.1	55
350	25	8,495	-29.6	...	31	8,485	-30.3	...	25	8,541	-27.0	...	30	8,547	-26.0	...	28	8,575	-25.4	...	29	8,573	-26.1	...	30	8,573	-26.1	...
300	25	9,574	-38.3	...	31	9,560	-39.5	...	25	9,633	-35.5	...	30	9,643	-34.4	...	28	9,673	-34.1	...	29	9,669	-34.5	...	30	9,669	-34.5	...
250	24	10,802	-47.4	...	31	10,784	-47.8	...	24	10,875	-45.3	...	30	10,892	-44.2	...	28	10,922	-44.3	...	29	10,916	-44.5	...	30	10,916	-44.5	...
200	23	12,253	-55.0	...	29	12,230	-55.7	...	22	12,330	-55.6	...	29	12,348	-55.5	...	27	12,375	-56.3	...	28	12,367	-56.5	...	30	12,367	-56.5	...
175	23	13,098	-58.5	...	26	13,080	-58.8	...	21	13,175	-60.0	...	26	13,193	-60.9	...	24	13,219	-62.2	...	25	13,208	-63.1	...	30	13,208	-63.1	...
150	16	14,064	-62.8	...	17	14,051	-63.5	...	18	14,125	-63.5	...	16	14,153	-65.8	...	15	14,158	-68.2	...	17	14,138	-68.5	...	30	14,138	-68.5	...
125	12	15,168	-69.1	...	7	15,180	-66.8	...	14	15,256	-67.8	...	7	15,248	-68.0	...	8	15,230	-72.5	...	7	15,219	-71.3	...	30	15,219	-71.3	...

¹ Insufficient observations.

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meter, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during 1946

Standard pressure surface (mb.)	August (1,010.6 mb.)				September (1,008.2 mb.)				Standard pressure surface (mb.)	August (1,010.6 mb.)				September (1,008.2 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity		Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	29	50	25.7	83	25	50	25.2	87	500.....	29	5,892	-7.9	55	22	5,809	-7.7	65
1,000.....	29	144	25.7	82	25	123	25.5	84	450.....	29	6,714	-12.7	57	22	6,690	-12.4	63
950.....	29	601	23.3	77	25	579	23.1	81	400.....	29	7,595	-18.4	57	21	7,573	-18.1	58
900.....	29	1,067	20.5	75	25	1,045	20.2	77	350.....	29	8,579	-25.4	57	21	8,556	-25.2	58
850.....	29	1,560	17.5	67	24	1,537	17.3	75	300.....	29	9,678	-34.1	57	19	9,657	-34.0	58
800.....	29	2,076	14.3	65	24	2,053	14.2	72	250.....	29	10,927	-44.4	57	19	10,906	-44.1	58
750.....	29	2,623	11.1	61	24	2,600	10.9	70	200.....	29	12,383	-56.2	57	17	12,360	-56.3	58
700.....	29	3,193	8.0	56	24	3,170	7.6	69	175.....	29	13,219	-62.9	57	11	13,180	-63.9	58
650.....	29	3,806	4.6	50	24	3,784	4.1	67	150.....	19	14,142	-68.2	57	5	14,140	-70.1	58
600.....	29	4,450	0.8	57	23	4,427	0.3	69	125.....	8	15,203	-72.0	57	.....	.....	.....	.....
550.....	29	5,149	-3.3	55	23	5,121	-3.7	66	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE 2.—Free-air resultant winds based on pilot balloon observations made near 5 p. m., E. S. T. (2200 G. C. T.), during October 1946. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second

Altitude (meters) m. s. l.	Abilene, Tex. (534 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (868 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (100 m.)			Charleston, S. C. (16 m.)			Cincinnati, Ohio (180 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,198 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity			
	Surface	31	173	5.4	31	219	2.6	30	74	0.7	28	287	5.1	29	279	3.3	30	312	2.2	30	118	4.0	27	245	2.8	17	202	2.9	31	52	1.0	31	202	1.0	31	347	1.8	31	219
500	31	181	6.0	31	219	2.6	30	48	1.2	28	287	5.1	29	279	3.3	30	312	2.2	30	118	4.0	27	245	2.8	17	202	2.9	31	52	1.0	31	202	1.0	31	347	1.8	31	219	2.0
1,000	30	193	6.4	31	219	2.6	28	58	1.6	28	284	7.6	23	294	7.2	30	302	3.3	26	149	8.0	25	248	7.9	16	262	8.4	26	14	202	2.9	31	306	1.3	31	220	3.5		
1,500	28	209	7.2	31	226	4.2	26	78	1.5	26	285	8.9	22	295	8.6	30	302	3.3	24	161	4.0	22	262	8.8	11	273	10.6	25	8	1.7	25	252	2.9	31	306	1.3	31	232	4.2
2,000	27	227	7.7	31	238	5.4	25	289	1.5	23	279	9.3	21	262	8.6	29	294	4.4	22	167	3.1	17	282	8.4	10	273	11.2	20	68	1.5	24	268	3.1	30	227	1.6	31	241	6.0
2,500	26	241	8.5	31	246	7.0	24	303	1.5	23	279	10.4	20	262	11.2	29	289	5.3	20	164	2.5	15	271	10.9	.....	.....	.....	19	344	1.7	22	281	4.3	28	238	4.2	31	246	8.3
3,000	24	250	12.1	29	258	13.0	24	277	4.5	19	275	10.2	17	268	13.0	26	284	9.3	13	91	0.9	.....	.....	.....	.....	.....	19	319	3.7	18	294	4.0	25	256	9.4	29	249	13.0	
4,000	23	254	14.3	26	263	17.8	22	285	6.5	16	276	10.7	14	262	12.4	20	291	12.6	12	258	2.3	.....	.....	.....	.....	.....	15	318	4.9	13	267	7.3	21	264	14.5	28	248	14.2	
5,000	22	257	15.5	24	264	20.0	20	284	7.1	14	270	10.1	11	277	12.3	18	290	11.9	12	281	2.9	.....	.....	.....	.....	.....	15	318	6.4	10	265	8.6	21	260	18.2	25	246	16.8	
6,000	16	250	19.3	19	256	21.8	16	277	12.0	10	284	11.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8,000	11	255	23.0	16	244	27.4	11	287	11.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10,000	11	255	23.0	16	244	27.4	11	287	11.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,476 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (575 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (416 m.)			Miami, Fla. (12 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity			
Surface	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
500	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
1,000	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
1,500	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
2,000	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
2,500	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
3,000	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
4,000	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
5,000	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
6,000	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
8,000	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3
10,000	30	363	1.1	31	300	3.6	30	38	0.8	28	268	3.8	30	41	3.7	29	202	4.0	31	142	1.2	31	147	2.3	31	308	1.1	31	77	2.6	31	76	1.8	30	229	0.5	31	183	1.3

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (306 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Paul, Minn. (225 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (15 m.)			Sault Ste. Marie, Mich. (225 m.)			Seattle, Wash. (116 m.)			Spokane, Wash. (603 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity			
Surface	31	275	4.3	29	197	5.6	29	190	2.8	31	219	1.0	25	337	3.2	29	166	3.0	30	215	2.4	31	123	3.2	29	278	3.7	28	240	2.4	28	257	2.4	30	230	2.4	29	210	0.7
500	31	302	4.5	29	196	6.7	29	191	4.1	31	220	1.7	25	338	3.1	29	179	3.1	30	220	3.7	31	130	3.9	29	288	4.5	28	225	4.2	28	253	2.8	30	232	2.8	29	201	1.4
1,000	31	332	3.6	28	193	9.1	29	196	6.4	31	226	2.3	25	334	3.1	29	194	6.8	28	212	5.6	31	145	4.3	29	289	4.8	28	225	4.5	28	253	2.8	30	232	2.8	29	201	1.4
1,500	29	345	3.9	28	205	9.1	26	206	9.0	31	217	2.2	24	318	3.6	28	210	7.4	25	226	8.8	26	159	4.8	25	286	5.0	26	183	4.6	25	240	2.3	29	238	2.5	29	228	2.4
2,000	29	343	5.2	25	215	9.7	22	229	9.6	31	219	3.1	21	294	5.1	26	217	8.2	23	240	11.0	21	183	4.8	25	286	5.0	26	183	4.6	25	240	2.3	29	238	2.5	29	228	2.4
2,500	29	344	5.4	21	230	10.4	20	242	10.3	31	228	4.3	19	267	7.1	24	224	7.7	22	243	12.6	18	204	14.6	16	216	5.0	24	306	3.6	17	270	13.8	19	266	2.6	24	301	3.4
3,000	29	344	5.9	20	243	10.5	16	253	12.2	31	236	6.3	18	260	10.1	24	236	7.9	17	249	16.7	13	235	4.7	21	292	5.7	12	270	14.2	13	333	5.8	15	327	5.3	20	295	6.7
4,000	23	319	7.0	18	250	13.5	14	261	14.5	31	248	9.9	16	254	13.1	22	238	8.0	16	244	18.2	10	236	18.2	12	261	17.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,000	22	310	8.0	15	258	17.6	14	254	15.6	29	244	14.1	14	262	13.0	22	272	10.4	12	267	11.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6,000	14	311	9.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8,000	11	315	9.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10,000	11	315	9.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....				

TABLE 3.—Maximum free-air wind velocities (m. p. s.) for different sections of the United States based on pilot balloon observations during October 1946

Section	Surface to 2,500 meters (m. s. l.)				Station	2,501 to 5,000 meters (m. s. l.)				Station	Above 5,000 meters (m. s. l.)			
	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date		Maximum velocity	Direction	Altitude (m.) m. s. l.	Date		Maximum velocity	Direction	Altitude (m.) m. s. l.	Date
Northeast ¹	38.4	sw.	1,917	18	Portland, Maine.....	45.4	nw.	3,537	3	Portland, Maine.....	72.0	w.	9,317	19
	38.4	w.	634	1	Buffalo, N. Y.....					Huntington, W. Va.....	78.4	sw.	17,726	7
East-Central ²	43.7	wsw.	1,856	18	Greensboro, N. C.....	55.5	sw.	5,000	18	Birmingham, Ala.....	57.0	w.	14,473	14
Southeast ³	31.7	se.	1,146	8	Charleston, S. C.....	28.2	w.	5,000	12	Sault Ste. Marie, Mich.....	92.1	n.	10,033	31
North-Central ⁴	35.1	sw.	606	30	Alpena, Mich.....	48.4	w.	4,951	26	Sioux City, Iowa.....	79.3	w.	14,366	2
Central ⁵	53.5	wsw.	2,500	26	Sioux City, Iowa.....	62.0	sw.	2,769	26	Memphis, Tenn.....	60.0	w.	11,423	12
South-Central ⁶	36.0	sw.	2,500	29	Amarillo, Tex.....	42.0	nw.	5,000	12	Tatoosh Island, Wash.....	78.0	nnw.	11,051	5
Northwest ⁷	34.4	wsw.	2,350	23	Pocatello, Idaho.....	49.0	w.	4,450	25	Denver, Colo.....	82.0	n.	8,942	10
West-Central ⁸	38.7	s.	2,273	1	Rock Springs, Wyo.....	43.4	sw.	5,000	29	Albuquerque, N. Mex.....	80.8	sw.	10,065	31
Southwest ⁹	28.0	sw.	2,465	2	Las Vegas, Nev.....	48.0	sw.	4,780	29					

¹ Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.

² Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.

³ South Carolina, Georgia, Florida, and Alabama.

⁴ Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.

⁵ Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.

⁶ Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.

⁷ Montana, Idaho, Washington, and Oregon.

⁸ Wyoming, Colorado, Utah, northern Nevada, and northern California.

⁹ Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

RIVER STAGES AND FLOODS FOR OCTOBER 1946

C. R. JORDAN

Precipitation during October was above normal over most of the country west of the Mississippi River except a narrow strip along western California and the southern border of the Plains, Texas, Oklahoma, Arkansas, Louisiana, and southern Missouri. It was also wetter than usual in the Carolinas and northern Georgia, and in Pennsylvania and northern New York. Accumulations were much above the usual amounts over a broad strip of the west-central portion of the Great Plains, extending from North Dakota to the Texas Panhandle and over most of Nevada and western Utah. Less than half the usual rainfall was received in west-central Texas, the central Gulf coastal area, along the middle and north Atlantic coasts, and in northern Michigan.

Unusually high floods for this season of the year occurred in Texas, Oklahoma, and Kansas. Highest stages of record were reached at a few headwater stations.

Missouri Basin—Flooding occurred along the Republican River from Bloomington, Nebr., to Clay Center, Kans.; the smaller tributaries of the Republican River; the Saline River; and the Smoky Hill River at Abilene, Kans.

At Bloomington and Guide Rock, Nebr., the Republican reached the highest stages since 1935, but overflow along the stream in Kansas was light, generally not more than a foot above bankfull. Beaver Creek, Sappa Creek, and Prairie Dog Creek, all tributaries of the Republican, overflowed moderately. Damage in the Republican Basin was estimated at \$386,000, most of which was in Franklin, Webster, and Nuckolls Counties, Nebr.

Rather severe overflow of the Solomon River was reported above Beloit, Kans., with moderate flood stages extending downstream. The crest at Beloit was 8.93 feet above flood stage, on the 11th. Damage along the Solomon River was set at \$66,000.

One of the highest stages of record occurred on the Saline River at Tescott, Kans., where a crest 3.35 feet

above flood stage was reached on the 14th. Estimated damage in this basin was \$25,000.

The Smoky Hill River overflowed slightly at Abilene, Kans. Overflow was due largely to water from the Solomon and Saline Rivers; practically no damage occurred in this basin.

Arkansas Basin.—Record-breaking floods occurred in the smaller streams of the Panhandle sections of Texas and Oklahoma as a result of heavy and general rains that occurred during the period October 4-10. Precipitation ranged from 1 to more than 8 inches, with the heaviest rain falling in the period from the 4th to the 6th. Considerable damage to crops, livestock, and property occurred in the upper North Canadian River Basin.

Press and other reports indicate that unusually high water levels were reached in the headwaters of the North Canadian River. The uppermost station operated by the Weather Bureau, Woodward, Okla., reported a crest of 9.8 feet at midnight, October 9-10, the fourth highest stage of record since 1919. Rainfall was light east of Woodward and the flood peak was reduced rapidly as it moved downstream. It is interesting to note that the time of crest travel from Woodward to El Reno, Okla., was 138 hours; it normally takes from 48 to 72 hours.

West Gulf of Mexico Drainage.—Heavy rain along the lower central section of the Guadalupe River produced severe flood conditions in the vicinity of Victoria, Tex. The United States Geological Survey reports that a stage of 31.6 feet was reached at the Victoria gaging station. This exceeded slightly the record flood of 1936 at Victoria. Water entered the town and spread over wide sections of farm lands. There was also some overflow of the Nueces River at Three Rivers, Tex., and the San Antonio River at Goliad, Tex.

The Rio Grande exceeded flood stage by 0.2 foot at Mercedes, Tex., on the 12th as a result of locally heavy rain, but little or no damage was reported.

FLOOD STAGE REPORT FOR OCTOBER 1946

[All dates in October unless otherwise specified]

River and station	Flood stage	Above flood stages— dates		Crest ¹	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
Waccamaw: Conway, S. C.	Feet 7	Aug. 31	Sept. 7	Feet 7.6	Sept. 3-4
MISSISSIPPI SYSTEM					
Missouri Basin					
Solomon:					
Beloit, Kans.	18	7	13	26.9	11
Minneapolis, Kans.	26	14	15	27.0	14
Niles, Kans.	24	15	16	26.4	16
Saline: Tescott, Kans.	25	12	14	28.4	14
Smoky Hill: Abilene, Kans.	22	16	18	23.4	17
Republican:					
Bloomington, Nebr.	8	6	6	8.4	6
		8	9	9.0	9
		11	11	8.2	11
				11.1	7
Guide Rock, Nebr.	10	7	13	11.6	10
				12.4	12
Hardy, Nebr.	11	10	10	11.2	10
		12	13	11.5	13
Scandia, Kans.	10	10	10	10.2	10
		12	13	10.6	13
Concordia, Kans.	8	13	13	8.2	13
Clay Center, Kans.	15	8	14	15.6	10
				16.2	14
Arkansas Basin					
North Canadian:					
Woodward, Okla.	8	7	12	9.8	9-10
Canton, Okla.	9	9	13	11.0	9
				13.6	12
Yukon, Okla.	11	10	18	11.4	10
				14.5	16
Canadian: Union City, Okla.	6	8	10	7.6	8
				7.8	10
Arkansas: Great Bend, Kans.	8	9	12	9.0	11
WEST GULF OF MEXICO DRAINAGE					
San Antonio: Goliad, Tex.	35	1	3	42.6	2
		17	18	37.1	18
Guadalupe: Victoria, Tex.	21	Sept. 29	Sept. 30	21.6	Sept. 30
		16	18	31.6	17
Nueces: Three Rivers, Tex.	37	12	19	42.7	13
Rio Grande: Mercedes, Tex.	21	12	12	21.2	12

¹ Provisional.

CLIMATOLOGICAL DATA FOR OCTOBER 1946

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS

[For description of tables and charts, see Review, January 1943, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and

lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Section	Temperature						Precipitation					
	Section average	Departure from the normal	Monthly extremes				Section average	Departure from the normal	Greatest monthly		Least monthly	
			Station	Highest	Date	Station	Lowest	Date	Station	Amount	Station	Amount
Alabama	65.2	+0.4	Geneva	91	10	Scottsboro	30	14	In.	In.	Hayneville	In.
Arizona	58.4	-3.2	Ehrenberg	100	2	Fort Valley	12	31	1.42	-1.47	Collinsville	3.58
Arkansas	63.7	+0.9	5 stations	94	18	2 stations	25	12	-0.04	-0.04	Bright Angel R. S.	2.74
California	56.6	-3.8	Greenland Ranch	100	10	Gem Lake	6	28	2.79	-0.37	Lock and Dam No. 3	7.18
Colorado	45.1	-3.8	2 stations	92	2	Westcliffe	-11	11	1.07	-0.19	Lake Arrowhead	10.48
Florida	74.1	+1.1	Winter Haven	95	11	Marianna	43	13	1.80	+0.62	Cumbres	5.20
Georgia	64.2	-7	3 stations	91	11	Tallahassee	29	14	-1.38	-1.38	West Palm Beach	7.26
Idaho	41.5	-5.7	Nampa	85	1	Landmark	3	29	3.61	+0.96	Savannah No. 2	7.67
Illinois	59.7	+3.9	Paris	93	16	2 stations	26	12	2.62	+1.11	Burke	8.13
Indiana	59.2	+4.2	Crawfordsville	93	16	2 stations	23	13	3.18	-0.55	Beardstown	7.58
Iowa	55.7	+3.9	Ottumwa	89	5	Sibley	20	18	2.71	-0.4	Delphi	4.69
Kansas	58.4	+1.1	2 stations	92	12	2 stations	25	18	3.39	+1.06	Malvern	6.20
Kentucky	59.6	+1.2	Pikeville	92	5	2 stations	27	13	4.22	+2.23	Oakley	9.02
Louisiana	69.5	+1.0	10 stations	91	16	Tallulah	31	13	2.38	-0.26	Middlesboro	4.74
Maryland-Deleware	59.4	+3.2	Fort Meade, Md.	90	6	Oakland, Md.	24	14	1.94	-1.32	Camp Polk	6.09
Michigan	53.6	+4.8	Wayne	92	6	Garnet	13	20	2.75	-0.31	Tonoloway, Md.	4.43
Minnesota	46.6	+1	Albert Lea	82	5	Roseau	13	13	2.06	-0.63	Mass	9.25
Mississippi	66.0	+0.5	2 stations	92	15	Vicksburg Airport	30	13	3.68	+1.83	Moose Lake	6.64
Missouri	61.1	+3.3	Nevada	92	7	2 stations	24	12	1.83	-0.75	Woodville	4.90
Montana	39.6	-5.5	Glendive	95	1	Summit	-7	27	3.02	+0.08	Brunswick	6.98
Nebraska	50.6	-1.2	Haigler	92	2	Harrison	10	11	2.45	+1.37	Summit	7.16
Nevada	47.2	+3.5	Overton	93	1	2 stations	9	28	4.11	+2.64	Elwood (near)	9.68
New England	52.9	+3.4	New Bedford, Mass.	90	6	Lemington, Vt.	15	21	1.72	+1.07	Kyle Canyon R. S.	4.95
New Jersey	59.0	+4.3	4 stations	90	16	Sussex	24	14	2.17	-1.32	Moosehead, Maine	6.70
New Mexico	53.6	-1	Rodeo	92	11	Elizabethtown	-1	11	1.49	-2.13	Charlotteburg	2.59
New York	54.5	+4.5	Port Jervis	90	6	2 stations	17	20	1.58	+0.41	Broadview	6.00
North Carolina	60.8	+0.8	Monroe	91	7	Transau	24	14	3.52	+0.18	Lawrenceville	8.24
North Dakota	40.1	-4.0	Golva	91	1	Belcourt	2	12	3.60	+0.35	Gastonia	6.49
Ohio	57.6	+4.0	Ottawa	93	5	Mansfield	22	13	2.23	+1.23	Marmarth	4.04
Oklahoma	64.5	+1.9	Webbers Falls	96	6	Kenton	26	12	3.09	+0.55	Youngstown	5.43
Oregon	44.4	-5.4	Brookings	90	11	Chemult	4	28	2.03	-0.98	Hooker	7.99
Pennsylvania	56.0	+3.4	Bethlehem	92	7	3 stations	24	14	3.20	+1.26	Valsetz	15.43
South Carolina	64.0	+2	Walterboro	90	31	Walhalla	32	13	3.50	+0.23	Sharpsville	5.50
South Dakota	45.2	-3.5	Hot Springs	89	1	Custer	8	8	4.84	+1.95	Edgefield	8.44
Tennessee	60.5	+7	2 stations	90	16	2 stations	26	12	3.24	+2.05	Fairfax	6.78
Texas	69.4	+1.7	3 stations	94	14	3 stations	29	11	2.76	-0.04	Clinton	4.81
Utah	45.5	-3.7	Moab	84	2	Silver Lake (Brighton)	5	11	3.00	+0.31	Danevang	9.47
Virginia	59.1	+1.7	Lincoln	90	7	Burkes Garden	24	13	4.09	+2.90	Alta	13.08
Washington	45.8	-4.2	Richland	83	12	Rosalia	10	16	2.62	-0.35	Pinnacles	6.53
West Virginia	57.2	+2.6	2 stations	92	15	4 stations	20	12	3.82	+0.70	Paradise R. S.	15.11
Wisconsin	52.2	+3.9	4 stations	86	15	2 stations	15	13	2.67	-0.15	Spruce Knob	5.37
Wyoming	40.3	-3.5	Lagrange	91	1	3 stations	3	10	2.63	+0.22	River Falls	5.92
Alaska, Sept. 1946	43.4	-7	Edna Bay	76	16	Allakaket	-1	30	2.24	+1.14	Bechler River	6.72
Hawaii	73.8	+3	Waianae	63	11	Haleakala R. S.	39	11	4.56	-0.78	Little Port Walter	28.01
Puerto Rico	77.3	-3	Manati	97	9	Garzas	57	7	1.07	-1.07	Makahanaloa	24.00
									9.07	+1.78	Rio Blanco (1,800 feet)	19.78
											Toa Baja	3.35

1 Other dates also.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR OCTOBER 1946

District and station	Elevation of instruments			Pressure			Temperature of the air										Precipitation			Wind										Total snowfall Know, sheet, and ice on ground at end of month Number of days with thunder- storms			
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Temperature of the air										Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity		Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths					
							Mean	Departure from normal	Maximum	Date	Minimum	Date	Mean minimum	Greatest daily range	Total degree days	Mean temperature of the dew point							Mean relative humidity	Miles per hour							Direction	Date	
NEW ENGLAND																																	
Eastport	75	67	85	1,015.9	1,018.6	+2.7	52.0	+4.5	80	6	60	32	30	44	31	411	42	76	2.55	-1.0	1.24	8	9.2	w.	32	sw.	18	15	7	9	0.0	0	
Greenville, Maine	1,070	6	41	979.3	1,019.3	+1.6	46.3	+1.8	81	7	60	17	21	33	43	580	38	94	2.53	-0.1	0.86	9	4.1	nw.	20	-----	12	11	9	11	4.4	0.0	
Portland, Maine	103	5	45	1,015.2	1,019.0	+1.7	51.0	+2.3	84	6	64	26	22	38	39	436	42	86	1.49	-1.6	1.29	6	7.5	w.	28	sw.	31	15	8	8	4.5	0.0	
Concord	289	4	45	1,008.8	1,019.6	+2.0	51.0	+3.2	85	7	66	22	20	36	40	436	41	84	1.49	-1.9	1.61	7	6.0	se.	28	nw.	19	10	13	8	5.3	0.0	
Burlington	403	0	51	1,003.4	1,018.3	+1.0	52.2	+3.0	82	6	64	24	20	40	40	37	393	43	82	4.35	+1.4	1.23	9	7.8	s.	33	s.	25	10	10	11	5.7	0.0
Boston	124	33	62	1,014.9	1,019.6	+2.0	58.4	+4.8	86	7	68	38	20	49	29	234	46	72	3.4	-2.8	1.19	3	10.0	sw.	34	ne.	8	15	7	9	4.3	0.0	
Nantucket	12	4	34	1,019.6	1,020.0	+2.4	56.2	+2.0	80	7	65	36	21	48	31	275	50	86	3.7	-3.0	1.29	2	11.7	ne.	34	s.	18	19	5	7	3.8	0.0	
Block Island	26	11	46	1,019.0	1,020.0	+2.4	58.4	+3.5	79	6	64	44	20	53	20	212	51	82	2.2	-3.3	1.12	5	14.3	sw.	41	e.	8	17	5	9	4.3	0.0	
Providence	159	46	60	1,014.2	1,020.0	+2.4	58.4	+3.4	88	6	69	35	22	48	36	226	46	80	1.6	-3.0	1.14	3	7.6	sw.	31	sw.	18	15	8	8	4.3	0.0	
Hartford	159	5	44	1,014.2	1,020.0	+2.0	56.6	+3.4	85	6	69	31	22	44	38	278	48	85	1.90	-2.6	1.37	6	6.9	s.	26	n.	31	10	10	11	5.2	0.0	
New Haven	107	8	39	1,019.6	1,020.0	+2.0	56.8	+5.0	82	6	67	36	22	47	36	204	48	76	1.63	-2.7	1.29	9	6.8	ne.	19	se.	12	14	9	8	4.5	1.0	
MIDDLE ATLANTIC																																	
Albany	97	26	40	1,015.6	1,019.3	+1.3	54.2	+4.0	86	6	68	27	21	41	44	345	44	80	1.77	-1.6	1.06	6	7.2	s.	35	w.	18	11	10	10	4.7	0.0	
New York	314	415	454	1,008.5	1,019.6	+1.6	61.9	+5.6	87	6	70	45	1	54	25	142	49	70	7.9	-2.7	1.28	6	7.5	sw.	48	nw.	19	15	6	10	5.1	0.0	
Harrisburg	374	30	49	1,006.4	1,020.3	+1.7	58.4	+3.6	83	6	69	36	14	48	34	222	48	80	3.33	+4.4	0.98	10	6.6	nw.	31	nw.	12	10	9	12	5.4	0.0	
Philadelphia	114	5	57	1,015.9	1,020.0	+1.7	62.4	+4.6	87	6	71	45	14	54	28	125	51	82	1.22	-1.6	1.35	8	7.5	sw.	21	s.	12	13	7	11	4.6	0.0	
Reading	323	47	306	1,008.5	1,020.3	+1.7	59.8	+4.4	88	6	71	38	14	49	38	185	48	80	2.52	-6.8	0.83	9	8.5	n.	33	nw.	1	14	6	11	4.6	0.0	
Scranton	805	72	104	990.9	1,020.0	+1.7	62.4	+4.8	85	6	68	33	14	46	38	267	48	80	2.14	-9.7	0.77	7	5.4	n.	28	sw.	31	10	11	10	4.7	0.0	
Atlantic City	52	37	172	1,018.0	1,020.0	+1.7	61.2	+4.3	81	31	67	45	1	55	22	138	54	82	1.44	-1.8	0.96	6	15.6	ne.	43	ne.	10	16	5	10	4.3	0.0	
Trenton	190	89	107	1,012.9	1,019.6	+1.7	60.5	+4.9	86	6	70	42	22	51	33	170	50	74	1.23	-1.6	1.53	8	8.0	s.	24	ne.	8	13	6	12	4.8	0.0	
Baltimore	123	100	215	1,015.9	1,020.3	+1.7	62.2	+4.0	85	31	71	44	15	53	28	134	51	78	2.59	-3.6	1.64	9	8.8	s.	33	s.	12	15	9	7	4.0	0.0	
Washington	112	56	100	1,016.3	1,020.3	+1.7	62.0	+4.6	88	7	73	40	15	51	35	135	51	76	2.50	-3.1	1.01	10	6.1	s.	34	nw.	12	15	5	11	4.8	0.0	
Cape Henry	18	8	54	1,018.6	1,019.3	+1.7	65.5	+3.4	85	31	72	46	2	60	25	54	57	79	1.80	-2.2	1.53	8	13.7	n.	43	sw.	12	15	7	9	4.5	0.0	
Lynchburg	686	4	50	995.6	1,020.3	+1.3	59.2	+2.0	81	30	70	34	2	48	38	196	48	78	1.41	-1.7	1.91	7	8.2	n.	31	ne.	9	13	6	12	5.0	0.0	
Norfolk	91	80	125	1,016.6	1,020.0	+1.7	64.8	+2.3	84	31	72	46	2	58	25	70	56	82	1.26	-1.8	1.77	11	9.6	ne.	26	n.	12	10	9	12	5.4	0.0	
Richmond	144	11	52	1,014.2	1,019.6	+1.0	62.2	+2.6	85	31	73	42	14	51	33	131	52	85	2.15	-7.7	1.63	9	7.1	ne.	26	sw.	18	12	9	10	4.8	0.0	
SOUTH ATLANTIC																																	
Asheville	2,253	77	92	941.1	1,020.7	+1.7	58.4	+1.3	81	30	72	32	2	45	43	214	49	84	5.69	+2.9	4.06	4	6.1	nw.	25	nw.	12	14	8	9	4.3	0.0	
Charlotte	779	63	86	991.9	1,020.0	+1.7	62.5	+1.8	81	30	72	32	2	45	43	214	49	84	5.69	+2.9	4.06	4	6.1	nw.	25	nw.	12	14	8	9	4.3	0.0	
Greensboro	886	6	56	988.5	1,020.7	+1.7	60.2	+1.7	83	7	72	36	2	48	38	166	50	83	2.09	-4.1	1.87	7	7.9	ne.	30	sw.	18	12	9	10	5.0	0.0	
Hatteras	11	5	50	1,018.3	1,018.6	+0.3	67.4	+1.5	77	28	72	55	24	63	14	22	61	84	3.64	-1.3	1.71	7	12.7	ne.	34	n.	13	14	6	11	5.1	0.0	
Raleigh	376	5	69	1,006.4	1,020.0	+1.7	62.6	+1.6	85	7	74	38	2	52	36	115	52	86	4.17	+1.3	1.82	8	6.6	n.	26	sw.	18	11	8	12	5.1	0.0	
Wilmington	72	73	107	1,016.6	1,019.0	+1.0	66.0	+0.7	81	31	74	48	2	58	25	53	59	88	4.62	+1.2	2.44	7	8.0	n.	28	sw.	18	16	8	7	4.1	0.0	
Charleston	48	11	92	1,016.9	1,018.6	+1.7	68.2	+1.4	81	18	75	53	13	61	21	20	58	88	2.68	-6.1	1.90	5	9.8	n.	36	se.	8	14	11	7	4.1	0.0	
Columbia, S. C.	347	70	91	1,006.4	1,019.0	+1.7	65.4	+1.1	83	29	76	44	14	55	32	64	54	78	4.62	+2.1	3.26	5	7.5	ne.	34	ne.	8	13	11	7	4.7	0.0	
Greenville, S. C.	1,040	18	36	982.4	1,019.6	+1.7	65.4	+1.1	85	11	77	43	13	52	30	110	50	76	4.29	+1.2	3.22	5	8.9	ne.	43	n.	8	12	11	7	4.6	0.0	
Augusta	182	62	77	1,012.5	1,019.0	+1.7	65.4	+1.1	85	11	77	43	14	54	36	62	54	76	5.51	+3.0	4.11	7	5.1	ne.	24	n.	8	9	13	6	5.1	0.0	
Savannah	65	73	152	1,016.3	1,018.3	+2.0	68.4	+2.7	88	11	78	47	3	58	30	25	60	84	5.10	+2.1	4.23	6	9.5	ne.	42	s.	8	9	16	6	5.1	0.0	
Jacksonville	43	80	110	1,015.9	1,017.0	+1.0	71.7	+1.6	89	11	79	54	13	64	26	6	64	86	4.13	-3.2	4.41	11	9.2	ne.	33	s.	8	11	13	7	5.2	0.0	
FLORIDA PENINSULA																																	
Key West	21	10	64	1,013.2	1,013.9	0	77.7	+0.5	88	10	85	70	31	75	15	0	72	80	4.02	-2.0	1.84	12	9.7	e.	35	sw.	7	14	10	7	4.5	0.0	
Miami	25	242	249	1,013.9	1,014.6	+0.7	77.0	+0.7	88	12	81	68	7	73	13	0	70	84	3.15	-4.6	1.95	16	14.5	ne.	50	se.	7	6	21	4	5.4	0.0	
Tampa	35	6	43	1,014.6	1,015.9	+1.3	76.1	+1.8	89	11	85	61	3	67	22	0	66	84	4.86	+1.8	2.36	5	8.0	ne.	33	w.	8	15	13	3	4.1	0.0	
EAST GULF																																	
Atlanta	1,173	33	72	977.0	1,019.0	+1.7	62.2	+0.4	81	10	73	41	13	52	30	109	51	76	3.02	+3.8	1.88	5	8.7	e.	29	sw.	18	12	13	6	4.0	0.0	
Macon	370	79	87	1,005.1	1,018.3	+1.3	63.2	-1.3	82	30	74	42	14	52	34	95	53	76	2.30	+0.1	1.07	5	5.9	n.	20	nw.	12	12	5	14	5.5	0.0	
Thomasville	374	49	86	1,008.1	1,018.0	+1.7	68.9	+0.7	87	11	79	46	13	58	29	15	58	76	3.04	-1.0	1.23	4	5.9	n.	25	sw.	11	11	12	8	4.5	0.0	
Apalachicola	35	11	51																														

See footnotes at end of table

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR OCTOBER 1946—Continued

District and station	Elevation of instruments			Pressure			Temperature of the air								Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation					Wind					Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms					
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean	Departure from normal	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum				Greatest daily range	Total	In.	In.	In.	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity								
																										Miles per hour	Direction			Date				
MIDDLE SLOPE																																		
Denver ¹	5,292	106	113	835.1	1,012.5	-3.8	58.0	+1.4	83	2	61	22	11	38	39	488	30	56	7.7	+0.3	.31	10	7.3	s. nw.	32 ne.	9	9	16	6	5.1	.0	.0	0	
Pueblo ¹	4,690	5	36	854.4	1,012.5	-3.1	51.4	+1.2	88	3	68	20	11	35	51	420	30	56	.69	0	.57	4	7.8	s. nw.	29 sw.	29	15	9	7	4.3	.0	.0	0	
Concordia ¹	1,392	50	58	964.1	1,014.2	-2.7	57.4	+1.5	81	3	67	32	12	48	33	263	48	77	0	+1.1	.80	11	9.0	s. nw.	29 sw.	29	12	6	13	5.5	.0	.0	4	
Dodge City ¹	2,509	5	58	925.2	1,012.5	-1.4	56.0	+1.1	82	3	66	31	18	46	34	299	47	79	4.56	+3.3	2.14	8	17.3	s. nw.	48 nw.	24	11	7	13	5.5	.0	.0	2	
Wichita ¹	1,358	6	64	965.8	1,013.9	-3.0	61.0	+2.4	82	3	71	36	18	51	33	167	48	70	4.32	+1.7	2.01	10	16.2	s. se.	42 s.	29	8	8	15	6.5	.0	.0	3	
Oklahoma City ²	1,214	10	47	971.6	1,014.9	-2.0	65.4	+3.9	85	17	76	38	12	55	39	85	52	70	1.22	-1.6	.98	7	10.7	s. se.	23 s.	13	10	9	12	5.5	.0	.0	2	
Tulsa ¹	674	10	60	990.9	1,014.9	-	65.4	+3.8	86	8	78	38	12	53	36	80	50	64	1.59	-1.8	2.77	8	11.6	s. se.	34 nw.	17	11	12	8	5.1	.0	.0	6	
SOUTHERN SLOPE																																		
Ablene ¹	1,738	4	59	953.3	1,013.5	-2.8	66.0	+4.6	88	17	80	36	12	58	34	42	54	66	2.23	+0.4	.69	5	17.3	s. se.	41 s.	29	9	11	11	5.7	.0	.0	1	
Amarillo ¹	3,676	5	42	887.9	1,012.4	-3.5	59.2	+3.4	84	26	71	34	11	48	40	209	48	76	5.73	+4.1	2.66	7	15.4	w. se.	45 s.	5	12	10	9	5.1	.0	.0	5	
Del Rio ¹	960	63	71	979.7	1,012.5	-2.7	73.2	+3.3	87	24	81	44	12	66	27	19	62	73	1.02	-.8	.73	8	9.8	s. se.	24 se.	5	3	15	13	6.5	.0	.0	1	
Roswell ¹	3,506	75	83	891.3	1,311.9	-2.7	62.5	+3.0	85	29	77	34	12	48	43	111	44	58	1.31	-1	.76	5	7.5	s. se.	28 s.	16	15	7	9	4.6	.0	.0	5	
SOUTHERN PLATEAU																																		
El Paso ¹	3,778	29	85	884.9	1,010.5	-2.7	62.0	+4.2	86	20	79	43	11	53	36	38	40	42	0.73	0	.28	4	9.4	s. se.	34 se.	14	13	12	6	4.4	.0	.0	2	
Albuquerque ¹	5,314	5	45	836.8	1,011.5	-	56.3	+3.0	80	2	69	31	11	43	38	273	34	45	1.02	+2	.54	7	10.1	s. se.	44 s.	29	16	9	6	3.9	.0	.0	5	
Flagstaff ¹	6,907	36	51	789.7	1,015.6	+2.4	45.4	-1.5	70	25	60	20	31	30	46	608	28	57	2.10	+7	.96	8	11.7	s. w.	21 w.	14	11	6	4	3.1	.0	.0	1	
Phoenix ¹	1,107	39	87	972.6	1,011.2	-	67.6	-3.0	89	14	81	42	30	34	38	24	44	50	.05	-4	.03	3	6.0	s. se.	21 w.	16	16	9	6	4.9	.0	.0	1	
Tucson ¹	2,555	5	39	924.1	1,011.9	-	65.9	-2.8	89	1	80	44	7	52	41	51	42	49	.82	+3	.48	5	5.9	s. se.	23 n.	24	25	4	2	4.1	.0	.0	1	
Yuma ¹	142	9	54	1,006.1	1,011.2	-	70.4	-2.9	94	1	85	45	30	56	37	14	40	40	T	-3	T	0	5.9	s. se.	23 n.	24	25	4	2	4.1	.0	.0	1	
MIDDLE PLATEAU																																		
Reno ¹	4,527	20	52	862.5	1,016.9	+1.3	45.5	-3.8	78	25	64	13	29	28	53	604	28	58	2.76	+2.0	.26	6	7.1	n. w.	32 nw.	17	12	10	9	4.7	T	.0	0	
Winnemucca ¹	4,339	5	56	868.3	1,017.3	-	43.8	-4.5	72	13	57	14	31	31	44	659	31	65	2.93	+2.3	1.23	12	6.6	s. w.	26 nw.	5	7	13	11	6.0	3.0	T	3	
Modena ¹	5,473	10	46	832.4	1,013.9	-	44.2	-3.8	72	21	57	22	19	32	44	647	31	65	5.91	+5.2	1.84	19	9.5	w. se.	38 sw.	16	18	6	7	3.9	T	.0	5	
Salt Lake City ¹	4,227	32	58	866.2	1,014.6	-1.7	46.6	-4.2	73	1	56	27	11	37	35	573	34	64	3.61	+2.3	1.12	13	9.1	s. se.	49 nw.	1	9	7	15	6.3	T	.0	5	
Grand Junction ¹	4,602			858.8	1,015.2	-4	49.6	-3.2	76	1	62	19	28	31	40	37	477	30	54	-8	-1	.30	7	6.2	s. se.	31 sw.	20	7	13	11	5.5	T	.0	5
NORTHERN PLATEAU																																		
Baker ²	3,471	36	54	895.7	1,017.6	-1.0	41.0	-4.1	66	13	52	17	28	30	39	739	28	70	1.25	-2	.21	11	5.7	s. se.	24 nw.	5	9	8	14	6.0	.4	.0	0	
Boise ¹	2,739	5	49	919.7	1,016.3	-1.7	45.2	-4.9	68	25	56	22	28	34	31	615	32	62	1.11	-1	.42	10	9.3	s. se.	38 nw.	25	7	9	15	6.3	.6	.0	0	
Pocatello ¹	4,478	5	31	862.2	1,016.3	-1.0	44.0	-2.5	71	1	53	25	11	34	35	654	31	64	2.16	-5	.71	15	11.1	s. w.	35 sw.	1	3	11	17	7.1	4.0	.0	0	
Spokane ¹	1,929	27	42	946.8	1,018.0	-	44.2	-4.1	64	13	55	19	28	33	35	643	34	68	1.38	+2	.58	10	7.8	s. w.	29 s.	22	5	8	18	6.7	T	.0	1	
Yalla Walla	991	57	65	981.0	1,017.3	-1.0	50.6	-2.9	72	13	59	29	28	42	35	447	31	68	1.39	-1	.51	14	5.4	s. se.	26 w.	34	6	6	16	6.5	.0	.0	0	
Wakia ¹	1,076	58	67	973.3	1,017.3	-	45.5	-4.4	74	12	61	19	28	31	40	590	34	68	T	+1	.36	7									T	.0	---	
NORTH PACIFIC COAST																																		
North Head	211	5	55	1,010.5	1,018.3	+7	50.5	-2.6	60	10	55	39	28	46	14	445	48	80	4.16	+1.1	1.66	21	14.0	n. w.	50 se.	21	4	7	20	7.2	.0	.0	0	
Seattle ¹	125	90	321	1,013.5	1,016.6	-1.0	51.1	-2.3	60	5	57	35	28	45	19	434	44	81	3.76	+6	.89	15	9.1	s. se.	38 sw.	22	3	8	20	7.6	.0	.0	0	
Tacoma	194	172	201	1,010.8	1,018.0	+7	49.2	-1.3	63	24	55	32	28	43	20	490	40	80	3.31	0	.99	16	8.5	s. e.	33 sw.	24	5	9	17	6.7	.0	.0	1	
Tatoosh Island	86	9	61	1,014.2	1,017.3	-1.0	48.9	+1.0	57	3	53	40	31	45	10	498	41	86	4.56	-2.7	1.34	19	13.0	s. e.	47 s.	21	7	10	14	6.4	.0	.0	0	
Medford ¹	1,329	29	58	971.2	1,019.3	-	46.5	-4.1	81	11	62	26	28	37	46	480	38	71	1.90	+5	.72	12									T	.0	0	
Portland, Oreg. ²	154	68	106	1,013.2	1,019.0	+1.0	52.4	-1.8	70	11	59	35	28	46	24	389	44	80	4.98	+1.9	1.35	15	5.6	n. w.	19 s.	31	2	6	23	8.0	.0	.0	0	
Roseburg	510	45	76	1,001.0	1,020.0	+1.4	56.2	-3.7	70	24	60	31	16	40	32	457	43	78	3.54	+9	.70	16	3.6	n.	15 nw.	26	0	12	19	7.4	.0	.0	0	
MIDDLE PACIFIC COAST																																		
Eureka	60	72	88	1,016.9	1,019.3	+1.3	52.0	-1.5	73	11	59	35	28	45	25	401	46	81	2.26	-1	1.12	9	6.8	n.	27 n.	8	10	14	7	5.1	.0	.0	0	
Red Bluff ¹	353	5	26	1,002.7	1,015.6	-	61.6	-2.7	91	12	74	32	29	49	40	100	34	40	.17	-1.2	.11	2	8.0	n. w.	32 ne.	7	15	8	8	4.4	.0	.0	0	
Sacramento ²	66	92	115	1,012.5	1,014.9	-0.7	61.2	-1.7	87	10	73	34	28	49	33	146	41	53	.75	-2	.70	3	6.7	w.	24 nw.	14	19	8	4	3.4	.0	.0	0	
San Francisco ²	155	112	132	1,010.5	1,015.9	-0.4	60.4	-1	86	11	67	47	28	53	26	169	46	72	.15	-1.0	.08	3	7.5	w.	25 w.	1	20	7	4	2.9	.0	.0	0	
SOUTH PACIFIC COAST																																		
Fresno ¹	327	5	34	1,002.7	1,014.9	+3	61.6	-7	91	13	77	32	30	46	38	141	42	58	.73	+2	.24	3	4.8	n. w.	24 nw.	5	17	11	3	3.1	.0	.0	1	
Los Angeles	338	223	250	1,001.7	1,013.9	-3	64.5	-8	90	24	75	46	30	54	34	75	47	60	.92	+2	.37	4	6.3	w.	29 nw.	4	19	7	5	3.2	.0	.0	1	
San Diego ¹	87	20	55	1,010.5	1,013.9	-3	64.2	-1	86	11	73	47	31	55	29	55	53	71	.34	-2	.18	7	6.0	w.	18 w.	1	18	3	10	4	1	.0	.0	1
ALASKA																																		
Anchorage ¹	132	6	44	999.3	1,004.4	-	39.4	+3.4	55	6	46	20	31	33	26	793	32	72	1.80	-1.38	.26	15	7.7	n.	41 s.	30	0	4	27	8.6	.4	.0	0	
Fairbanks ¹	455	5	63	985.8	1,003.1	-	31.0	+4.4	55	7	40	2	31	22	30	1,051	26	75	1.88	+1.04	1.17	9	6.5	n.	46 sw.	30	3	3	25	8.2	17.5	15.0	0	
Juneau ¹	80	6	30	1,008.1	1,011.2	-	40.8	+4.4	54	13	45	23	31	36	21	751	36	82	10.52		4.66	24	9.4	n.	38 se.	10	1	2	27	8.6	.3	T	0	
Nome	22	10	75	996.6	997.3	-	33.5	+1.4	47	4	38	7	31	28	19	975	32	88	2.63	+1.05														

¹ Data are airport records.
² Barometric data (adjusted to old city elevation) and hygrometric data from airport; otherwise city office records.
³ Observations taken bihourly.

⁴ Pressure (adjusted to old city elevation), temperature, and hygrometric data from airport; otherwise city office records.

NOTE.—Except as indicated by notes ¹, ², ³, and ⁴ data in table are city office records.

SEVERE LOCAL STORMS FOR OCTOBER 1946

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
New York State, northern section.	Oct. 1946 1				\$100,000	Heavy snow	Rain changed to wet, heavy snow in early hours and continued all day; depth ranged up to 22 inches. Rail traffic delayed; many secondary roads blocked, and numerous automobiles stalled on highways. Trees broken; utility lines disrupted for extended periods. \$100,000 damage estimated, for Watertown, N. Y., only. Total damage for area undetermined.
Nebraska, south-central counties.	3-7					Heavy rains	Rain measured from 6 to 7.70 inches in some sections, causing flooding in lowlands. Some damage from washing, and loss in corn and root crops where water was standing.
Rogers, N. Mex.	5	P. m.				Severe wind	Much damage to farm buildings; small loss in crops.
North Dakota, northwest portion.	5-8					Snow	9 inches of snow fell. All roads open by the 8th, and telephone service resumed after 3 days.
Florida	6-9			0	5,200,000	Hurricane	This hurricane was one that quickly lost force only a few hours before striking. Loss in citrus fruits, \$5,000,000; property damage, about \$200,000. Tides along Florida west coast were unusually high and caused much of damage. Town of Everglades was inundated to depths ranging from 1½ to 3 feet. Parts of Punta Gorda and Fort Myers were flooded as well as low beaches and islands from Tampa Bay to the Keys. Some few beach cottages were undermined or damaged or destroyed. Considerable damage to piers, bulkheads, sea-walls, and houseboats. As the storm moved northward through the State, some communication and power lines were downed by falling trees and limbs, but loss was not great. Slight damage was reported along the Atlantic coast around Titusville, Fla., to Charleston, S. C., mostly from high tides.
South Dakota, north-central counties.	7					Rain, sleet, and snow.	Rain changing to sleet and snow caused spotted damage to power and telephone lines and broke down trees and caused loss in unharvested crops.
South Carolina	8	Entire day				Tropical disturbance.	Storm accompanied by heavy to excessive rains and winds reaching gale force in some areas. Damage negligible except that some open cotton in fields was blown down and beaten to the ground lowering the quality of staple.
Martin and Howard Counties, Tex.	9	7:02 p. m.	1		110,000	Hail, wind, and rain.	Loss in crops, \$100,000; property damage, principally in Big Spring, \$10,000.
Goodland, Okla.	17	5:30-6 p. m.	100	0	25,000	Tornado	Loss to crops in stack or stored in barns, \$7,000; several farm buildings damaged; school buildings destroyed, \$18,000.
Greenwood, Ind.	18	4:35 a. m.	33	0	50,000	do	Buildings and airplanes damaged; trees and poles down; path southwest to northeast and 1 mile long.
Muskogee, Okla.	14	2:30 a. m.			50,000	Electrical	School building struck by lightning and burned.
Kalispell, Mont., and vicinity.	20	1 a. m.-9 p. m.				Heavy snow	Power and communication lines disrupted between Kalispell and Polson, Mont. During this storm snowfall measured 11 inches, establishing a new October record for Kalispell. Mishaps on highways plentiful, but none serious.

¹ Miles instead of yards.

LATE STORM REPORTS FOR SEPTEMBER 1946

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Phillipsburg, Kans., and vicinity.	September 1946 2	9:30 a. m.-12:10 p. m.	880-1,320		\$10,000	Heavy hail and wind	Loss in crops; 3 airplanes at Phillipsburg Airport damaged; path 5 miles long.
Eskridge to Alma, Kans., and vicinity.	2	About noon		0	2,000	Tornado	Path extended from southwest of Eskridge to north of Alma. Large barn 6 miles west of Eskridge destroyed; path 20 miles long.
Geary County, Kans.	3	5 p. m.	12-3		15,000	Heavy hail	Path extended through center of Geary County from north to south. Much loss in crops; path 20 miles long.
Nemaha and Brown Counties, Kans.	3-4	10 p. m.-2:30 a. m.	128		240,000	Hail and wind	Damage especially severe in Powhattan, Hiawatha, Seneca, and Norton, Kans. Roofs damaged on about 1,410 buildings in Brown County. Estimate about equally divided between 2 counties, with \$160,000 crop loss and \$80,000, property damage; path 40 miles long.
Pottawatomie County, Kans., eastern and south-central portion.	4	9:30 a. m.-3 p. m.	115		65,000	Wind and rain	Telephone service between Topeka and Manhattan interrupted for several hours. Corn flattened; crop loss, \$40,000; path 30 miles long.
Chapman, Kans., and vicinity.	4	1-2 p. m.	16		10,000	Heavy hail	Globes of street lamps and window panes broken; roofs damaged; some crop loss; path 12 miles long.
Toronto, Kans., and vicinity.	4	3:30-4:30 p. m.	120		5,500	High winds	Trees blown over; telephone and power lines damaged; much corn flattened; path 25 miles long.
Lincoln County, Kans., west-central and northern portions.	4	P. m.	14		50,000	Hail and wind	Leaves stripped from trees and growing crops; many small buildings blown over.
Lime Springs, Riceville, and Jamestown, Iowa.	5	P. m.				Hail, wind, heavy rain, and flood.	Farm buildings damaged, crops flattened, trees blown over, and loss in corn and soybeans from hail. Heavy rain caused local flooding; several bridges washed out.
Ridgeway, Decorah, Nordness, Waukon, and New Albin, Iowa.	5	P. m.			34,000	Wind, heavy rain, and flood.	Trees blown over and crops flattened. Heavy rain caused local flooding; railroad grades and bridges washed out. Flood loss along upper Iowa River and tributaries estimated at \$34,000.
Emmetsburg, Iowa.	5	do.				Wind	Trees and cornfields leveled.
Northwood, Long Grove, Davenport, McCausland, Mason City, and Clinton, Iowa.	5	do.				Wind, electrical, and heavy rain.	Streets and basements flooded; small creeks overflowed. Wind caused minor damage; some farm buildings burned.
Buckhannon, W. Va., vicinity of.	10	12:15-12:23 p. m., E. S. T.	1		7,500	Wind and rain	10 airplanes outside of hangar at Lewis Airport caught in sudden, severe windstorm and damaged.
Menlo to Monument, Kans.	13	6 p. m.	do.		45,000	Hail and wind	Crop loss small, not estimated; sheds and grain bins blown over path 25 miles long.

See footnote at end of table.

LATE STORM REPORTS FOR SEPTEMBER 1946—Continued

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
San Antonio, Tex.	September 15					Rain and flood.	4.85 inches of rain, the heaviest precipitation for a 24-hour period since the Sept. 10, 1921, flood was recorded. Streets in San Antonio inundated. Creeks in the west and northwest sections of the city sent Woodlawn Lake waters over embankments, stalled traffic in some areas. Fire, police, and sheriff's departments swamped with emergency calls.
Mableton, Ga., 1 mile south.	22	3 p. m., E. S. T.	75	0	10,000	Tornado.	This tornado dipped to earth, causing damage within a small area, then lifted. It remained on the ground over an area of about 500 yards in a sparsely settled section; most of the damage occurred locally soon after the strike between Mableton and Austell. A home completely demolished; several small buildings badly damaged. Number of trees blown down or uprooted, causing damage to telephone and power lines.
Independence, Vinton, Keystone, and Belle Plaine, Iowa.	22					Rain and flood.	Rain exceeding 4 inches flooded streets and basements and caused small creeks to overflow. Damage to highways, fences, crops, etc. Damage estimated in many thousands of dollars, with similar losses in all areas.
Danville Municipal Airport and Ringgold, Va.	24	9:15-10:00 p. m.	1		15,000	Wind and hail.	Small house demolished; 6 or more roofs torn from houses; north side of cinder-block hangar destroyed; considerable loss in orchards. No hail damage reported.
Wakeeney, Kans., and vicinity.	28	5:30-6 a. m.	1		10,000	Heavy hail.	Loss mostly in crops; path 20 miles long.
Ontario, Pomona, Claremont, San Dimas, Cucamonga, and Chino, Calif., and vicinities.	29	1:50-3:05 p. m., P. S. T.	1		32,000	Thunderstorm and heavy rain.	Electric and telephone service interrupted for several hours. 3.25 inches of rain fell in 1 hour and 20 minutes near Alta Loma. Vineyards heavily covered with silt; much erosion; roads washed out, and traffic disrupted. 1 person killed when a car skidded.
Wayne County, N. Y.	29	2-2:30 p. m.	1 1/4-2		100,000	Hail.	Storm struck two separate areas, one southeast of Marion with a path about 3 miles long, the other in North Rose with a path 4 miles long. Cabbage badly shredded, and loss in beans and apple crops.
Rockport, W. Va., vicinity of.	29	3-12 p. m., E. S. T.				Heavy rain and local flash flood.	Corn flattened.

¹ Miles instead of yards.

SOLAR RADIATION AND SUNSPOT DATA FOR OCTOBER 1946

Explanations of the tables and references to descriptions of instruments, stations, and methods of observations and to summaries of data, are given in the MONTHLY WEATHER REVIEW, vol. 72, page 43, January 1944. A list of pyrheliometric stations is given on page 45 of the same REVIEW.

SOLAR RADIATION OBSERVATIONS

[Gram calories per minute per square centimeter of normal surface]

Date	Sun's zenith distance										75th mer. time
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	Air mass										
	A. M.					*1.0	P. M.				
e	5.0	4.0	3.0	2.0			2.0	3.0	4.0	5.0	e

LINCOLN, NEBR.

	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Oct. 1.	8.1					1.37	1.17	0.97	0.82	0.62	10.2
Oct. 2.	8.1	0.75	0.85	0.98	1.17	1.35	1.08	.80	.67	.52	7.4
Oct. 3.	9.4							1.05	.90	.75	13.7
Oct. 11.	5.1	.96	1.09	1.20							5.3
Oct. 12.	4.6	.62	.90	1.05	1.27						8.4
Oct. 14.	6.9	.83	.92	1.05	1.22	1.44	1.25	1.08	.95	.84	10.2
Oct. 15.	9.8				1.03	1.28					12.7
Oct. 19.	8.7				1.44	1.22	1.07	.94	.83		8.1
Oct. 21.	8.7				1.20	1.44	1.14	.95	.79	.69	14.6
Oct. 22.	9.1		.96	1.09	1.24	1.41	1.23	1.06	.88	.75	12.3
Oct. 24.	9.1				1.44	1.31	1.14	1.05	.96		7.2
Oct. 25.	6.9		.96	1.05	1.24	1.45	1.23	1.10	.97	.86	11.8
Oct. 26.	9.8	.81	.92	1.05	1.24	1.46	1.17	.97	.82		12.3
Oct. 28.	16.4					1.10					18.3
Oct. 30.	9.1	.92	1.03	1.11	1.29	1.47					9.8
Means		.82	.95	1.07	1.21	1.41	1.19	1.02	.88	.76	
Departures		+.02	+.03	.00	-.05	-.06	-.05	-.04	-.05	-.06	

BLUE HILL, MASS.

	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Oct. 1.	6.9	0.98	1.08								8.6
Oct. 2.	6.7	.93	1.03	1.15	1.31						6.6
Oct. 3.	6.7	.97	1.05	1.17		1.49	1.26	1.07	0.93	0.84	7.0
Oct. 4.	9.6	.90	1.02	1.14	1.26	1.40	1.13	1.00	.85	.73	9.4
Oct. 5.	13.2	.77	.87	1.02	1.22		1.11	.87	.76	.67	14.7
Oct. 6.	11.4	.92	1.00	1.14	1.24			.91	.76	.62	11.8
Oct. 7.	11.3	.90	1.02	1.12	1.23	1.42	1.14	.92	.72	.62	11.0
Oct. 9.	6.9					1.33	1.20	1.05			7.0
Oct. 11.	11.8					1.49	1.25	1.10	.98	.87	13.0
Oct. 13.	9.7			1.15	1.36	1.54	1.34	1.18	1.06	.97	7.2
Oct. 14.	6.4	.98	1.04	1.11		1.25	1.06	.95	.81	.71	7.1
Oct. 15.	6.1	.73	.80	.93		.96	.79	.66	.57		7.7
Oct. 16.	9.2	.63	.74	.90	1.09			.66			8.5
Oct. 17.	12.7	.36	.53	.73			.59				12.8
Oct. 19.	7.7	1.00	1.09	1.22	1.35	1.49	1.30		1.00	.87	6.2
Oct. 20.	6.4	.70	.83								7.2
Oct. 21.	7.4	.83	.92		1.19	1.60	1.21	1.00	.90	.78	6.9
Oct. 22.	6.6	.79	.90	1.05	1.24	1.24	.83	.68	.62	.64	6.4
Oct. 23.	7.4	.83	.94	1.09	1.25	1.19	.95	.78	.61		7.3
Oct. 24.	7.2	.50	.61	.75			.78				11.8
Oct. 25.	13.8				.87	1.18	1.08	.88	.73		12.8
Oct. 27.	17.0				1.16	1.18	1.02				17.3
Oct. 28.	12.8	.42	.54								11.6
Oct. 31.	14.7	.58	.69	.82							15.4
Means		.77	.90	1.02	1.18	1.49	1.18	.97	.86	.74	
Departures		-.09	-.06	-.06	-.05	+.09	-.03	-.06	-.06	-.05	

BOSTON, MASS.

Oct. 3.	7.2				1.20		1.24	0.98	0.72	0.71	7.2
Oct. 4.	9.8	0.71	0.71	0.87	.85		1.25	1.01	.64	.53	9.4
Oct. 11.	10.6				1.30		1.30				13.7
Oct. 16.	9.8				1.11						9.1
Oct. 22.	7.2				1.33						8.1
Oct. 23.	8.1			.90	1.02		.95	.68	.54	.42	9.4
Oct. 24.	8.1				.44						11.0
Means.....		(.71)	(.71)	(.93)	1.04		1.18	.89	.63	.55	
Departures.....		+.06	.00	+.11	-.01		+.05	-.01	-.08	-.05	

SOLAR RADIATION OBSERVATIONS

Date	Sun's zenith distance										75th mer. time
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	Air mass										
	A. M.					*1.10	P. M.				
e	5.0	4.0	3.0	2.0			2.0	3.0	4.0	5.0	e

RATIO, BOSTON/BLUE HILL, ON COMPARABLE DATES

	(.79)	(.70)	(.84)	.89		.95	.88	.74	.75	
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CLIMAX, COLO.

	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Oct. 1.					1.30	1.41					
Oct. 2.					1.34	1.45					
Oct. 3.					1.36	1.52					
Oct. 5.					1.52		1.48	1.30	1.12	0.96	
Oct. 6.					1.50		1.46	1.25			
Oct. 7.					1.30		1.28				
Oct. 8.					1.36	1.48					
Oct. 9.							1.24	1.17			
Oct. 13.					1.42	1.49		1.44	1.34	1.26	
Oct. 14.					1.41	1.52		1.54	1.42	1.31	
Oct. 15.					1.24	1.41		1.40	1.23	1.16	
Oct. 16.					1.38	1.52		1.50	1.38		
Oct. 19.					1.46	1.58		1.55	1.38		
Oct. 20.					1.42	1.51		1.49	1.40		
Oct. 21.					1.38	1.52		1.50	1.38	1.26	1.17
Oct. 22.					1.41	1.52		1.45	1.31	1.23	1.13
Oct. 23.					1.39	1.51		1.49	1.36	1.23	1.14
Oct. 25.					1.52		1.52	1.41	1.30	1.22	
Oct. 26.					1.56		1.46				
Oct. 28.					1.40	1.52		1.48			
Oct. 30.					1.40	1.50		1.53	1.37	1.18	1.14
Oct. 31.					1.42	1.56		1.49			
Means					1.38	1.51		1.46	1.34	1.23	1.13

TABLE MOUNTAIN, CALIF.

	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Oct. 2.		1.22	1.30	1.39	1.50	1.63					
Oct. 3.					1.48						
Oct. 5.					1.44						
Oct. 6.					1.43						
Oct. 7.					1.44						
Oct. 9.					1.47						
Oct. 11.					1.46						
Oct. 12.					1.46						
Oct. 13.					1.47						
Oct. 14.					1.40						
Oct. 15.					1.46						
Oct. 18.					1.49						
Oct. 20.					1.47						
Oct. 21.					1.49						
Oct. 22.		1.11	1.20	1.30	1.43	1.58					
Oct. 23.					1.44						
Oct. 29.					1.48						
Oct. 30.					1.54						
Oct. 31.					1.51						
Means		(1.16)	(1.25)	(1.34)	1.47	(1.60)					

*Extrapolated.

TABLE 2.—Daily totals and weekly means of solar radiation (direct+diffuse) received on a horizontal surface

[Gram calories per square centimeter]

Date	Washington, D. C.	Lincoln, Nebr.	East Lansing, Mich.	New York, N. Y.	Fresno, Calif.	Fairbanks, Alaska	Columbia, Mo.	Boston, Mass.	Nashville, Tenn.	Twin Falls, Idaho	La Jolla, Calif.	Riverside, Calif.	Blue Hill, Mass.	Newport, R. I.	State College, Pa.	Put-in-Bay, Ohio	Davis, Calif.	Tucule, Utah	New Orleans, La.	Toronto, Canada	Boulder, Colo.	Soda Springs, Calif.
1948	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
Oct. 1	435	449	401	256	428	214	504	273	509	45	89	298	207	366	498	414	254	518	179	420	116	
Oct. 2	498	472	371	195	322	170	511	186	485	382	470	474	216	254	444	449	420	507	442	430	397	
Oct. 3	450	317	350	411	332	222	504	352	455	255	394	349	446	423	392	424	351	426	456	367	334	
Oct. 4	409	196	352	320	472	187	465	326	457	364	456	487	409	414	316	419	487	302	353	323	497	
Oct. 5	418	171	338	394	482	68	477	313	450	114	220	382	404	414	404	398	500	334	327	271	458	
Oct. 6	422	70	342	391	479	111	436	315	380	143	456	487	396	411	401	402	467	88	494	296	47	
Oct. 7	402	214	318	295	472	149	440	299	381	165	455	456	405	381	400	399	407	405	406	336	152	
Means	433	270	353	314	455	160	477	295	445	210	409	389	368	358	389	427	436	331	428	313	227	
Departures	+107	-60	+88	+15	+30	+45	+132	+42	+112	-150	+22	-2	+62	+66	+123	+03	+32	-70	+47	+65	-107	
Oct. 8	250	249	256	102	473	102	390	217	272	165	280	460	293	319	350	248	463	96	470	236	352	
Oct. 9	42	212	341	193	462	47	222	297	355	375	434	470	388	314	94	247	455	480	441	100	430	
Oct. 10	55	53	274	193	449	66	231	167	310	372	437	444	233	142	98	367	452	458	450	202	220	
Oct. 11	214	276	72	206	454	73	282	322	39	388	424	458	397	376	115	122	445	475	303	190	422	
Oct. 12	208	310	178	98	435	65	474	129	418	381	440	444	175	184	56	146	426	472	446	34	444	
Oct. 13	443	120	209	402	432	116	445	331	437	372	432	400	403	416	390	389	464	478	291	392	456	
Oct. 14	407	424	156	352	425	34	430	321	407	198	420	404	384	389	370	182	414	454	450	110	339	
Means	251	235	212	221	447	72	356	255	230	321	406	445	324	304	214	243	435	414	434	167	371	
Departures	-77	-71	-21	-66	+51	-17	+7	+27	+31	-20	+16	+64	+13	-5	-47	-22	+65	+47	+53	-37	+43	
Oct. 15	397	282	296	330	368	99	389	247	411	193	321	420	330	349	375	352	243	431	450	254	326	
Oct. 16	396	67	153	272	409	100	122	257	428	67	394	408	310	297	344	221	386	75	388	193	296	
Oct. 17	297	29	27	217	402	55	37	175	244	145	426	441	307	296	196	30	297	170	405	28	66	
Oct. 18	164	365	56	73	410	58	420	4	374	220	417	417	56	106	110	44	411	384	343	34	258	
Oct. 19	405	386	232	365	428	40	42	307	241	362	279	352	289	377	366	349	401	411	326	293	405	
Oct. 20	39	400	216	150	418	85	343	290	277	287	335	379	288	257	57	252	374	425	374	219	346	
Oct. 21	202	381	284	305	378	32	225	286	328	218	316	403	359	351	129	338	237	370	413	218	386	
Means	271	273	181	243	402	67	226	219	329	213	355	403	291	290	228	226	336	334	386	177	290	
Departures	-13	-19	-25	-23	+38	-4	-100	+10	+32	-96	+14	+57	-90	+7	-4	-8	-9	-14	+27	-18	-33	
Oct. 22	326	392	255	258	335	22	344	254	347	59	335	388	345	337	175	314	140	308	425	208	372	
Oct. 23	356	111	218	211	315	67	347	224	115	260	365	363	338	322	223	265	397	218	350	136	396	
Oct. 24	328	349	224	229	400	90	110	143	149	88	362	402	281	270	291	305	379	310	346	300	313	
Oct. 25	266	371	132	273	381	36	402	218	67	314	305	380	302	286	241	52	368	402	271	24	304	
Oct. 26	311	360	275	54	576	47	393	89	373	300	243	371	143	178	276	341	191	340	376	245	299	
Oct. 27	317	242	248	122	138	42	335	184	341	119	63	86	300	257	313	320	306	95	318	228	203	
Oct. 28	148	218	204	163	335	11	215	149	317	286	102	60	136	192	84	261	362	81	273	176	276	
Means	293	292	222	187	326	45	307	180	244	204	253	293	264	263	220	265	309	250	337	174	327	
Departures	+36	+14	+35	-39	-20	-14	+5	-7	+10	-71	-57	-32	+32	+42	+33	+45	-17	-52	+1	-18	+23	

ACCUMULATED DEPARTURES ON OCT. 28, 1946

+4,438	-2,688	+3,157	-9,758	+5,720	+763	+1,428	-5,292	+770	-2,219	-2,618	+5,560	+11,669	-1,561	+1,610
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ADDITIONAL DATA FOR FAIRBANKS, ALASKA, SEPTEMBER 1946

Week beginning—	Means	Departures
Sept. 3	139	-68
Sept. 10	186	-40
Sept. 17	179	+15
Sept. 24	216	+80

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1946

By LUCY T. DAY

[Equatorial Division, U. S. Naval Observatory]

[Communicated by the Superintendent, U. S. Naval Observatory.] All measurements and spot counts were made at the Naval Observatory from plates taken at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive toward the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day under Mount Wilson group number, longitude, latitude, area of spot or group, and spot count, are included respectively: number of groups, assumed longitude of center of the disk, assumed latitude of center of the disk, total area of spots and groups, and total spot count.

Date	East- ern stand- ard time	Mount Wilson group No.	Hellographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Lon- gi- tude	Lat- tude	Dis- tance from center of disk				
1946 Oct. 1	h m		°	°	°	°				
	10 14	8224	-73	322	-15	77	6	1	G	U. S. Naval.
		8223	-60	335	-15	64	12	3		
		8222	-42	353	+19	43	12	2		
		8222	-39	356	+18	40	61	10		
		8216	-31	4	-17	39	388	1		
		8221	+23	58	+12	23	6	2		
		8213	+26	61	-43	55	6	1		
		8218	+30	65	-22	41	24	2		
		8204	+46	81	-10	49	36	4		
		8203	+51	86	-18	56	24	5		
		8200	+65	100	+22	65	109	1		
		8200	+69	104	+22	70	291	10		
		8200	+71	106	+19	71	12	2		
		(10)	(35)	(+7)			987	44		
	2 10 41	8223	-46	335	-15	50	24	1	F	Do.
		8222	-28	353	+18	30	36	6		
		8222	-26	355	+17	28	48	7		
		8216	-18	3	-17	31	388	1		
		8225	+33	54	+18	35	24	2		
		8218	+43	64	-22	52	48	3		
		8204	+60	81	-10	62	24	2		
		8220	+63	84	-25	69	24	2		
		8200	+78	99	+23	79	109	1		
		8200	+83	104	+24	83	291	4		
		(8)	(21)	(+7)			1,016	29		
	3 10 35	8222	-16	352	+18	20	61	9	F	Do.
		8222	-12	356	+17	15	61	5		
		8216	-4	4	-17	25	388	1		
		8225	+45	53	+17	47	48	1		
		8225	+50	58	+18	50	24	1		
		8221	+61	59	+10	51	12	4		
		8218	+56	64	-22	62	48	5		
		(5)	(8)	(+7)			642	26		
	4 10 31	8226	-6	349	-12	19	6	1	VG	Do.
		8222	-3	352	+17	10	73	11		
		8216	-2	353	-19	27	6	3		
		8222	0	355	+18	11	48	8		
		8222	+2	357	+15	8	24	6		
		8216	+10	5	-17	27	388	1		
		8225	+56	51	+16	56	24	1		
		8225	+64	59	+16	64	24	1		
		8218	+68	63	-21	71	12	1		
		(5)	(355)	(+7)			605	33		
	5 12 18	8229	-70	271	-13	72	145	1	G	Do.
		8228	-50	291	-15	55	24	1		
		8227	+10	351	-12	20	12	2		
		8222	+11	352	+18	16	121	10		
		8222	+14	355	+18	19	97	11		
		8227	+15	350	-15	26	48	5		
		8227	+18	359	-16	29	48	2		
		8216	+24	5	-17	33	339	5		
		(*)	+70	51	-26	76	6	1		
		(6)	(341)	(+6)			840	38		
	6 11 47	8229	-58	270	-13	61	61	1	G	Do.
		8228	-36	292	-15	42	6	1		
		8227	+25	353	-12	31	12	1		
		8222	+26	354	+16	27	73	12		
		8222	+27	355	+18	30	121	7		
		8227	+31	359	-17	38	121	10		
		8216	+39	7	-19	46	267	2		
		(5)	(328)	(+6)			661	34		

See footnotes at end of table.

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1946—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Hellographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Lon- gi- tude	Lat- tude	Dis- tance from center of disk				
1946 Oct. 7	h m		°	°	°	°				
	11 26	(*)	-70	245	+11	70	6	1	G	U. S. Naval.
		8229	-45	270	-13	49	48	1		
		8228	-22	293	-15	30	12	5		
		8227	+37	352	-13	42	12	2		
		8222	+39	354	+15	40	73	13		
		8222	+40	355	+17	41	61	6		
		8227	+41	356	-18	48	24	7		
		8227	+47	2	-17	53	73	3		
		8216	+50	5	-19	56	315	1		
		(6)	(315)	(+6)			624	39		
	8 10 33	8229	-32	270	-13	37	36	1	G	Do.
		8228	-10	292	-15	23	97	11		
		8228	-6	296	-15	22	73	1		
		8230	+11	313	+31	27	24	5		
		8222	+48	350	+14	48	24	4		
		8227	+51	353	-18	58	6	2		
		8222	+55	357	+18	56	48	2		
		8227	+60	2	-17	64	24	1		
		8216	+63	5	-19	68	339	1		
		(6)	(302)	(+6)			671	28		
	9 11 10	8229	-18	271	-14	27	24	1	P	Mt. Wilson.
		8228	+4	293	-15	22	121	3		
		8228	+9	298	-15	23	194	4		
		8231	+11	300	+19	17	24	2		
		8222	+69	355	+19	69	48	1		
		8216	+78	7	-18	80	339	1		
		(5)	(289)	(+6)			750	12		
	10 11 56	8233	-58	217	+16	59	24	10	G	Do.
		8232	-36	259	-15	42	61	9		
		8232	-34	241	-15	40	48	1		
		8229	-5	270	-13	20	16	4		
		8228	+17	292	-16	28	109	5		
		8228	+21	296	-15	30	24	2		
		8228	+23	298	-14	30	145	3		
		8222	+82	357	+19	82	48	1		
		(5)	(275)	(+6)			475	35		
	11 13 2	8235	-80	181	-17	82	97	1	F	U. S. Naval.
		8234	-70	191	+13	70	24	6		
		8233	-45	216	+16	47	6	4		
		8232	-21	240	-15	29	61	7		
		8232	-18	243	-15	27	145	1		
		8228	+29	290	-17	37	73	6		
		8228	+37	298	-15	42	194	3		
		(5)	(261)	(+6)			600	28		
	12 11 56	8238	-80	169	-12	80	339	1	VG	Do.
		8237	-77	172	-13	79	97	1		
		8235	-66	183	-16	70	73	2		
		8234	-58	191	+16	59	97	6		
		8234	-55	194	+14	55	73	7		
		8233	-40	209	+12	40	6	3		
		8233	-27	222	+15	29	48	8		
		8232	-9	240	-15	23	48	6		
		8232	-5	244	-15	21	194	4		
		8228	+41	290	-16	46	48	1		
		8236	+44	293	-23	52	12	3		
		8228	+48	297	-14	52	121	8		
		(8)	(249)	(+6)			1,156	60		
	13 11 20	8238	-76	160	-13	78	194	1	F	Do.
		8238	-68	168	-12	70	388	5		
		8237	-63	173	-12	65	48	1		
		8237	-63	173	-17	68	48	1		
		8235	-54	182	-16	58	73	1		
		8234	-45	191	+16	46	12	6		
		8234	-41	195	+14	41	109	2		
		8233	-18	218	+17	21	48	4		
		8233	-12	224	+16	16	61	4		
		8232	+6	242	-15	22	48	1		
		8232	+9	245	-15	23	194	1		
		8228	+55	291	-17	60	48	3		
		8236	+57	293	-23	63	48	2		
		8228	+61	297	-15	65	170	8		
		(8)	(236)	(+6)			1,489	40		

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1946—ContinuedPOSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1946—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Lon- gi- tude	Lat- i- tude	Dis- tance from cen- ter of disk				
1946 Oct. 14	A m 10 32	8241	-83	140	+21	83	291	1	G	U. S. Naval.
		8240	-72	181	-19	78	315	1		
		8238	-63	160	-12	67	218	2		
		8238	-66	167	-12	58	242	2		
		8237	-80	173	-15	55	73	2		
		8237	-60	173	-12	54	73	2		
		8235	-41	182	-14	46	48	1		
		8234	-30	193	+14	31	145	10		
		8233	-5	218	+17	12	48	7		
		8233	+1	224	+18	8	48	9		
		8232	+19	242	-15	27	12	2		
		8232	+20	243	-15	29	170	1		
		8236	+68	291	-26	73	73	1		
		8236	+70	293	-23	74	145	1		
		8228	+72	295	-15	77	194	8		
		(10)	(223)	(+6)			2,065	50		
15	10 11	8241	-60	141	+21	60	315	1	F	Do.
		8240	-59	151	-19	63	291	1		
		8239	-58	152	+12	57	24	3		
		8238	-50	160	-13	53	194	1		
		8238	-40	170	-12	43	242	1		
		8237	-40	170	-15	45	36	3		
		8237	-37	173	-13	42	73	2		
		8242	-32	178	+17	33	12	1		
		8235	-29	181	-15	36	61	2		
		8234	-19	191	+14	21	73	2		
		8234	-15	195	+14	19	145	1		
		8233	+8	218	+17	14	61	3		
		8233	+15	225	+16	18	24	2		
		8232	+34	244	-15	40	194	2		
		(10)	(210)	(+6)			1,745	24		
16	11 12	8245	-53	113	+23	83	48	1	P	Do.
		8244	-73	123	+6	73	109	1		
		8243	-60	136	+16	60	48	4		
		8241	-56	140	+21	58	291	1		
		8239	-51	145	+14	55	24	4		
		8240	-47	149	-19	54	315	1		
		8239	-44	152	+14	44	12	5		
		8238	-38	158	-15	43	194	1		
		8238	-29	167	-12	36	291	1		
		8238	-26	168	-17	37	6	1		
		8237	-21	175	-14	28	48	3		
		8242	-19	177	+15	21	97	12		
		8235	-16	180	-18	28	12	2		
		8234	-6	190	+12	10	24	2		
		8234	-3	193	+13	8	121	5		
		8233	+30	216	+16	23	48	2		
		8233	+27	223	+14	28	24	1		
		8232	+47	243	-15	42	194	2		
		(13)	(196)	(+6)			1,906	54		
17	10 30	8246	-88	95	+27	88	48	1	F	Do.
		8245	-73	110	+24	73	97	2		
		8244	-60	123	+6	60	97	1		
		8241	-43	141	+21	44	339	1		
		8240	-33	150	-19	43	315	1		
		8239	-29	154	+14	30	36	3		
		8238	-25	158	-15	32	194	1		
		8238	-15	168	-12	23	194	5		
		8242	-9	174	+16	13	97	10		
		8237	-8	175	-14	23	24	4		
		8242	-4	179	+16	11	61	7		
		8234	+11	194	+13	13	97	5		
		8233	+40	223	+14	41	109	7		
		8232	+60	243	-18	63	194	1		
		(12)	(183)	(+6)			1,902	49		
18	13 4	8246	-71	98	+26	71	97	1	F	Do.
		8245	-58	111	+24	59	73	2		
		8244	-46	123	+6	46	97	1		
		8241	-31	138	+26	37	24	1		
		8241	-28	141	+22	32	339	2		
		8243	-26	141	+14	30	6	2		
		8240	-19	150	-19	32	315	1		
		8238	-10	159	-12	22	194	1		
		8238	-2	167	-12	18	48	2		
		8238	+1	170	-12	17	194	3		
		8237	+6	175	-14	21	12	4		
		8242	+6	175	+16	12	48	3		
		8235	+11	180	-18	28	24	3		
		8242	+13	182	+16	18	48	1		
		8234	+22	191	+11	23	24	2		
		8234	+25	194	+13	27	73	2		
		8235	+56	225	+16	56	97	2		
		8232	+75	244	-15	78	97	2		
		(13)	(169)	(+6)			1,910	35		

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Lon- gi- tude	Lat- i- tude	Dis- tance from cen- ter of disk				
1946 Oct. 19	A m 10 13	8248	-75	82	-27	80	73	1	F	U. S. Naval.
		8246	-58	99	+26	60	61	1		
		8245	-46	111	+24	49	73	1		
		8244	-34	123	+6	34	97	1		
		8241	-16	141	+21	22	315	1		
		8243	-14	143	+11	15	24	3		
		8243	-9	148	+12	11	12	2		
		8240	-7	150	-20	27	291	1		
		8238	0	157	-18	24	24	1		
		8238	+3	160	-15	22	145	1		
		8239	+5	162	+11	7	12	3		
		8247	+8	165	+12	10	12	2		
		8237	+12	169	-15	25	121	6		
		8242	+19	176	+15	23	73	2		
		8242	+24	181	-15	25	97	1		
		8234	+37	194	+13	38	24	4		
		8233	+69	226	+16	69	48	1		
		(14)	(157)	(+6)			1,502	32		
20	10 31	8240	-79	65	+14	79	12	1	VG	Mt. Wilson.
		8240	-74	70	+11	74	97	6		
		8248	-63	81	-26	68	145	1		
		8246	-45	96	+29	52	6	1		
		8246	-45	99	+26	50	73	1		
		8250	-35	109	-31	48	48	3		
		8245	-33	111	+24	38	61	2		
		8250	-31	113	-29	45	61	8		
		8244	-20	124	+6	20	97	1		
		8241	-2	142	+21	16	291	1		
		8240	+3	147	-21	27	24	2		
		8240	+4	149	-20	24	339	1		
		8238	+12	156	-18	26	16	6		
		8238	+13	157	-15	25	170	1		
		8238	+25	169	-15	32	97	11		
		8242	+33	177	+15	35	61	12		
		8242	+37	181	-15	38	97	10		
		8242	+45	189	-15	46	12	3		
		8234	+50	194	+12	51	12	2		
		8233	+81	225	+16	81	24	1		
		(12)	(144)	(+5)			1,743	74		
21	10 52	8240	-67	63	+10	67	12	1	G	U. S. Naval.
		8240	-60	70	+10	60	97	6		
		8248	-48	82	-24	54	73	1		
		8246	-33	97	+27	39	48	1		
		8245	-22	108	+27	30	12	1		
		8246	-20	110	+24	27	61	1		
		8250	-20	110	-30	40	61	2		
		8250	-15	115	-29	37	48	4		
		8244	-7	123	+6	7	97	1		
		8241	+10	140	+21	19	315	1		
		8240	+19	149	-20	31	339	1		
		8238	+29	159	-14	34	194	1		
		8242	+47	177	+17	48	121	13		
		8242	+51	181	+15	52	48	1		
		(10)	(130)	(+5)			1,526	35		
22	10 45	8251	-80	37	-9	80	388	1	F	Do.
		8251	-70	47	-8	73	218	6		
		8240	-50	67	+10	50	206	1		
		8249	-46	71	+9	46	194	6		
		8248	-34	83	-26	45	73	1		
		8246	-20	97	+25	27	36	1		
		8250	-7	110	-31	36	97	1		
		8245	-6	111	+22	18	48	3		
		8250	-1	116	-31	36	61	1		
		8244	+6	126	+6	9	73	1		
		8241	+22	139	+20	28	388	1		
		8240	+32	149	-20	40	291	1		
		8238	+41	158	-15	45	145	1		
		8238	+55	172	-14	58	73	1		
		8242	+60	177	+14	60	48	4		
		8242	+65	182	+14	65	73	1		
		(11)	(117)	(+5)			2,412	39		
23	10 26	8251	-65	39	-9	67	339	1	VG	Do.
		8252	-55	49	-29	62	6	2		
		8251	-54	50	-8	56	194	5		
		8249	-36	68	+10	36	315	13		
		8249	-32	72	+9	32	291	16		
		8248	-22	82	-26	37	73	1		
		8246	-6	98	+26	22	12	1		
		8250	+4	108	-31	36	12	1		
		8250	+6	110	-31	36	97	5		
		8245	+7	111	+22	18	24	2		
		8250	+11	115	-32	38	121	7		
		8244	+21	125	+5	21	48	2		
		8241	+35	139	+20	37	291	4		
		8240	+45	149	-21	51	291	4		
		8238	+55	159	-15	58	145	1		
		8242	+78	182	+14	78	145	4		
		(12)	(104)	(+5)			2,404	79		

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1946—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic	Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Longi- tude	Lat- tude	Dis- tance from center of disk	
1946 Oct. 24	A M						
	10 48	8253	-88	3	-14	88	97
		8251	-59	32	-12	61	6
		8251	-52	39	-10	53	291
		8251	-50	41	-8	52	48
		8251	-40	51	-8	43	242
		8252	-39	52	-29	50	24
		8249	-22	69	+9	22	242
		8249	-19	72	+9	20	242
		8248	-9	82	-28	34	61
		8246	+7	98	+26	22	12
		8245	+21	112	+23	27	12
		8250	+23	114	-32	42	194
		8244	+35	126	+5	35	48
		8241	+48	139	+20	50	194
		8240	+60	151	-22	63	291
		8238	+70	161	-15	72	145
		(12)	(91)	(+5)			2,149
25	10 25	8253	-75	3	-14	76	194
		8243	-70	8	-13	71	218
		8251	-53	25	-7	55	36
		8254	-48	30	+17	50	6
		8251	-40	38	-9	43	218
		8251	-36	42	-8	38	61
		8251	-28	50	-8	32	218
		8252	-27	51	-28	42	12
		8249	-10	68	+9	11	145
		8249	-5	73	+9	6	242
		8248	+4	82	-27	32	61
		8246	+20	98	+25	27	48
		8245	+30	108	+25	35	12
		8250	+35	113	-32	50	145
		8250	+40	118	-33	53	48
		8244	+47	125	+5	47	48
		8241	+60	138	+20	60	242
		8240	+71	149	-22	73	388
		8238	+86	164	-15	86	145
		(13)	(78)	(+5)			2,487
26	12 24	8256	-70	354	+19	70	48
		8257	-70	354	-14	72	12
		8253	-60	4	-15	63	145
		8253	-66	8	-13	58	194
		8255	-52	12	-27	60	6
		8254	-35	29	+17	37	24
		8251	-26	38	-8	29	194
		8251	-22	42	-8	26	24
		8251	-18	46	-8	23	24
		8251	-10	54	+7	16	218
		8249	+4	68	+9	5	121
		8249	+10	74	+9	11	242
		8248	+18	82	-25	35	48
		8246	+30	94	+24	32	6
		8250	+53	117	-33	61	73
		8244	+60	124	+5	60	24
		8241	+74	138	+19	74	170
		(12)	(64)	(+5)			1,573
27	12 46	8259	-71	339	+10	71	48
		8253	-47	3	-15	51	170
		8253	-47	3	-13	50	194
		8254	-20	30	+16	23	48
		8251	-12	38	-9	17	194
		8251	-1	49	-9	14	48
		8251	+5	55	-8	13	242
		8249	+18	68	+9	19	145
		8249	+23	73	+9	24	145
		8248	+31	81	-25	43	48
		8250	+70	120	-35	76	97
		(*)	+73	123	-20	77	73
		(8)	(50)	(+5)			1,452
28	11 24	8260	-80	318	+30	80	97
		8259	-59	339	+9	59	61
		8253	-34	4	-15	39	158
		8253	-30	8	-13	35	194
		8254	-10	28	+17	16	12
		8254	-5	33	+15	12	12
		8251	+1	39	-10	14	97
		8251	+11	49	-9	18	24
		8251	+18	66	-8	22	242
		8249	+31	89	+9	31	97
		8249	+37	75	+9	37	121
		8248	+45	83	-25	52	24
		(7)	(38)	(+5)			1,139

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1946—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic	Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Longi- tude	Lat- tude	Dis- tance from center of disk	
1946 Oct. 29	A M						
	10 35	8260	-69	316	+30	71	97
		8259	-45	340	+10	45	61
		8253	-20	5	-15	28	170
		8253	-17	8	-13	24	194
		8258	-8	17	+12	11	12
		8254	+5	30	+14	11	24
		8254	+7	32	+16	13	61
		8251	+13	38	-10	20	72
		8252	+21	46	-29	40	6
		8252	+27	52	-28	43	6
		8251	+30	55	-7	33	218
		8249	+43	68	+9	43	73
		8249	+50	75	+9	50	73
		8248	+57	82	-25	62	12
		(9)	(25)	(+5)			1,080
30	10 13	8260	-56	316	+30	58	97
		8259	-31	341	+9	31	36
		8253	-8	4	-15	22	194
		(*)	-7	5	-30	35	48
		8253	-4	8	-13	18	194
		8258	+4	16	+10	7	24
		8258	+9	21	+11	11	48
		8254	+10	22	+14	13	48
		8251	+27	39	-10	31	48
		8251	+41	53	-9	43	48
		8251	+44	56	-9	47	291
		8249	+64	76	+9	64	73
		(7)	(12)	(+5)			1,149
31	10 28	8260	-55	304	+34	58	48
		8260	-40	310	+28	52	97
		8260	-43	316	+29	48	48
		8259	-18	341	+9	19	24
		8252	+4	3	-32	36	61
		8253	-5	4	-16	21	121
		8252	-8	7	-29	35	97
		8253	+10	9	-14	21	194
		8258	+22	21	-10	23	36
		8258	+30	29	+13	31	24
		8258	+37	36	+15	39	6
		8251	+40	39	-10	43	145
		8251	+56	55	-9	58	24
		8261	+58	57	-9	60	291
		(5)	(359)	(+4)			1,216

Mean daily area for 31 days=1,349

Mean 10 g+s for 31 days=128.1

*Not numbered.
VG=very good; G=good; F=fair; P=poor.PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR
OCTOBER 1946

[Based on observations at Zurich except as indicated by an asterisk. Data furnished through the courtesy of Prof. W. Brunner, Swiss Federal Observatory, Zurich Switzerland.]

October 1946	Relative numbers	October 1946	Relative numbers	October 1946	Relative numbers
1-----	91	11-----	50	21-----	128
2-----	107	12-----	68	22-----	133
3-----	73	13-----	92	23-----	132
4-----	77	14-----	144	24-----	123
5-----	55	15-----	115	25-----	136
6-----	64	16-----	131	26-----	128
7-----	67	17-----	126	27-----	130
8-----	65	18-----	127	28-----	106
9-----	57	19-----	134	29-----	109
10-----	61	20-----	131	30-----	102
				31-----	103

Mean, 31 days=102.1

Chart I. Departure (°F.) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, October 1946



Chart II. Tracks of Centers of Anticyclones, October 1946. (Inset) Departure of Monthly Mean Pressure from Normal

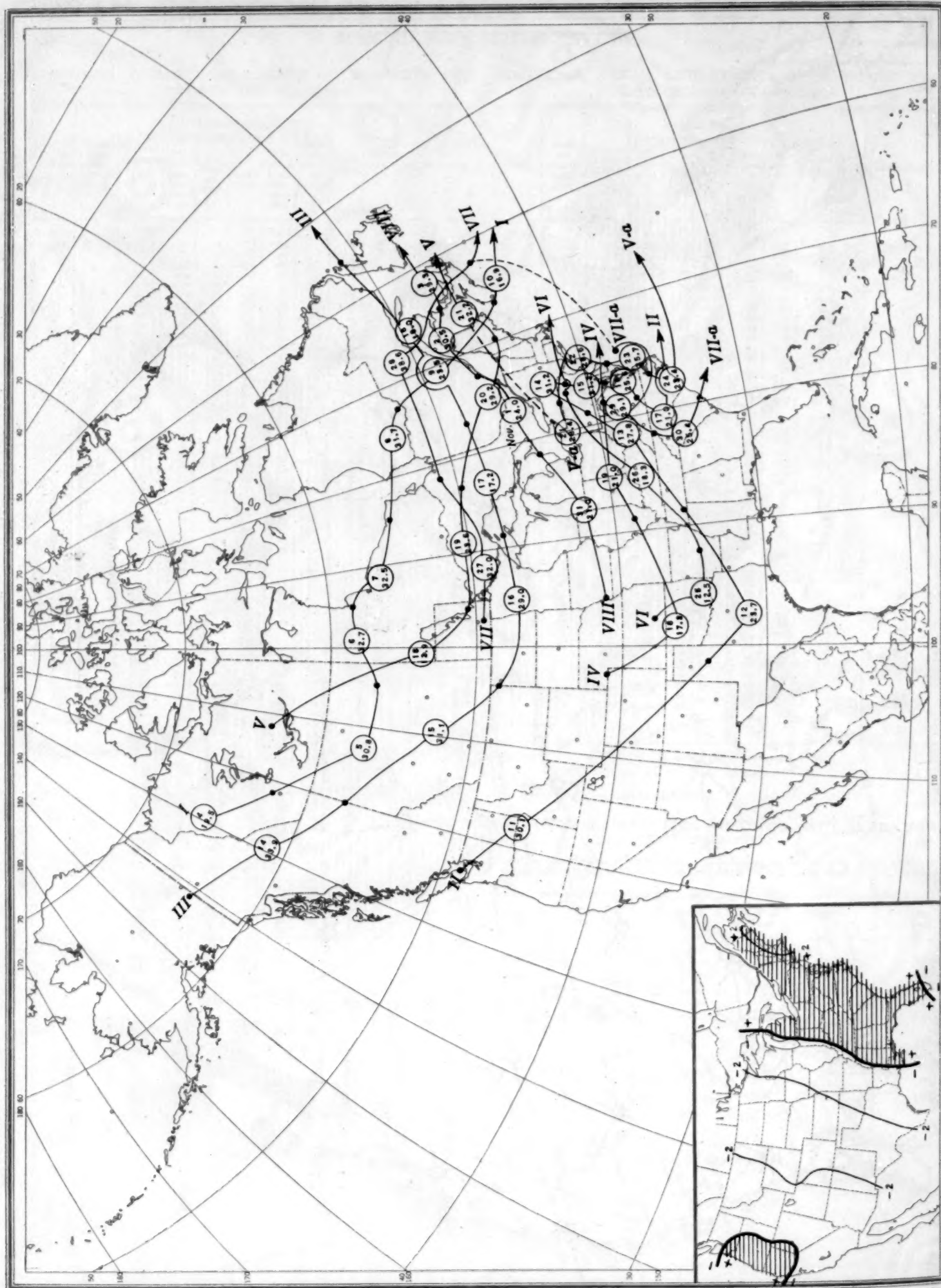
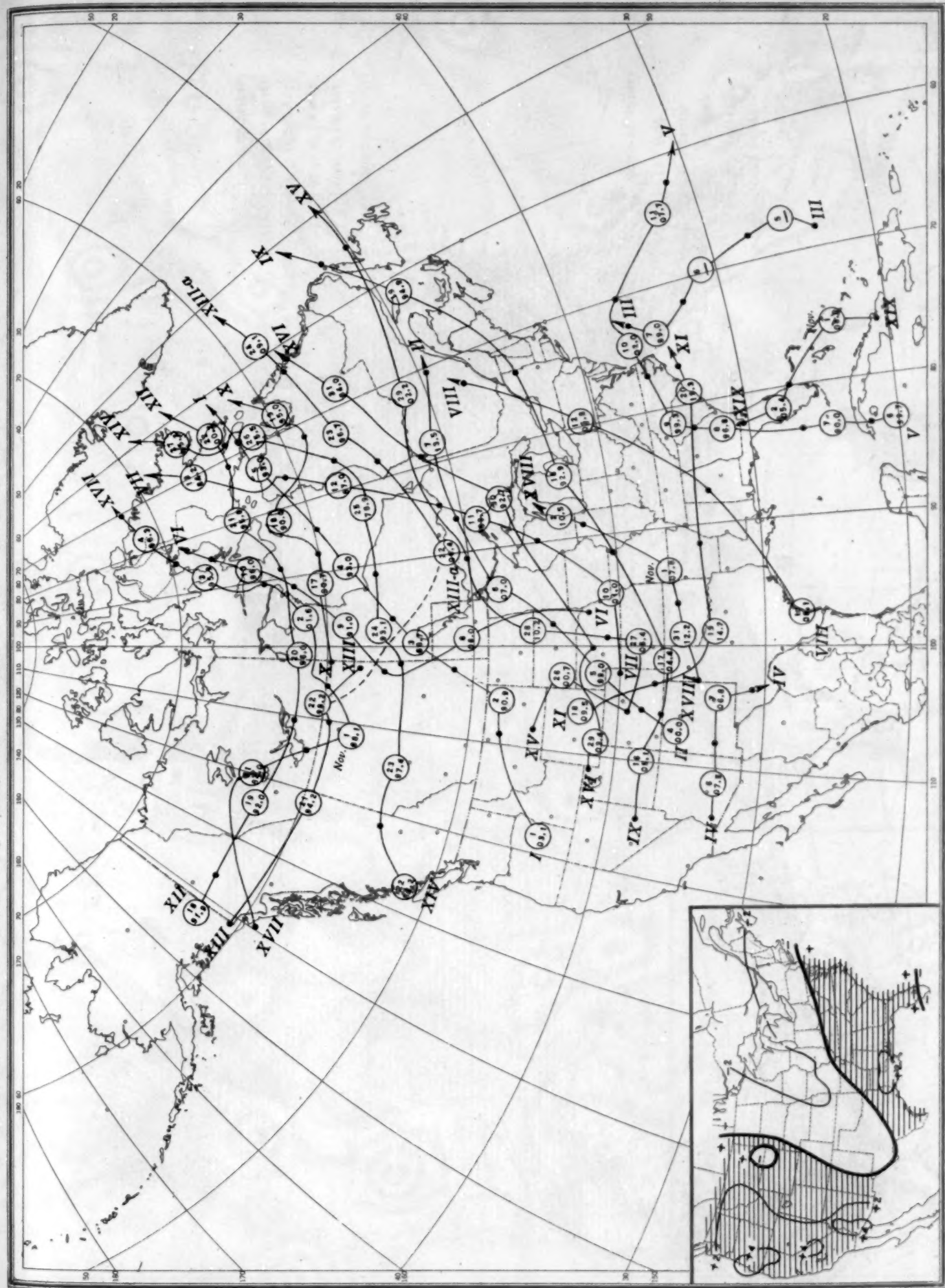


Chart III. Tracks of Centers of Cyclones, October 1946. (Inset) Change in Mean Pressure from Preceding Month

Chart III. Tracks of Centers of Cyclones, October 1946. (Inset) Change in Mean Pressure from Preceding Month



Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (75th meridian time)

Chart IV. Percentage of Clear Sky Between Sunrise and Sunset, October 1946

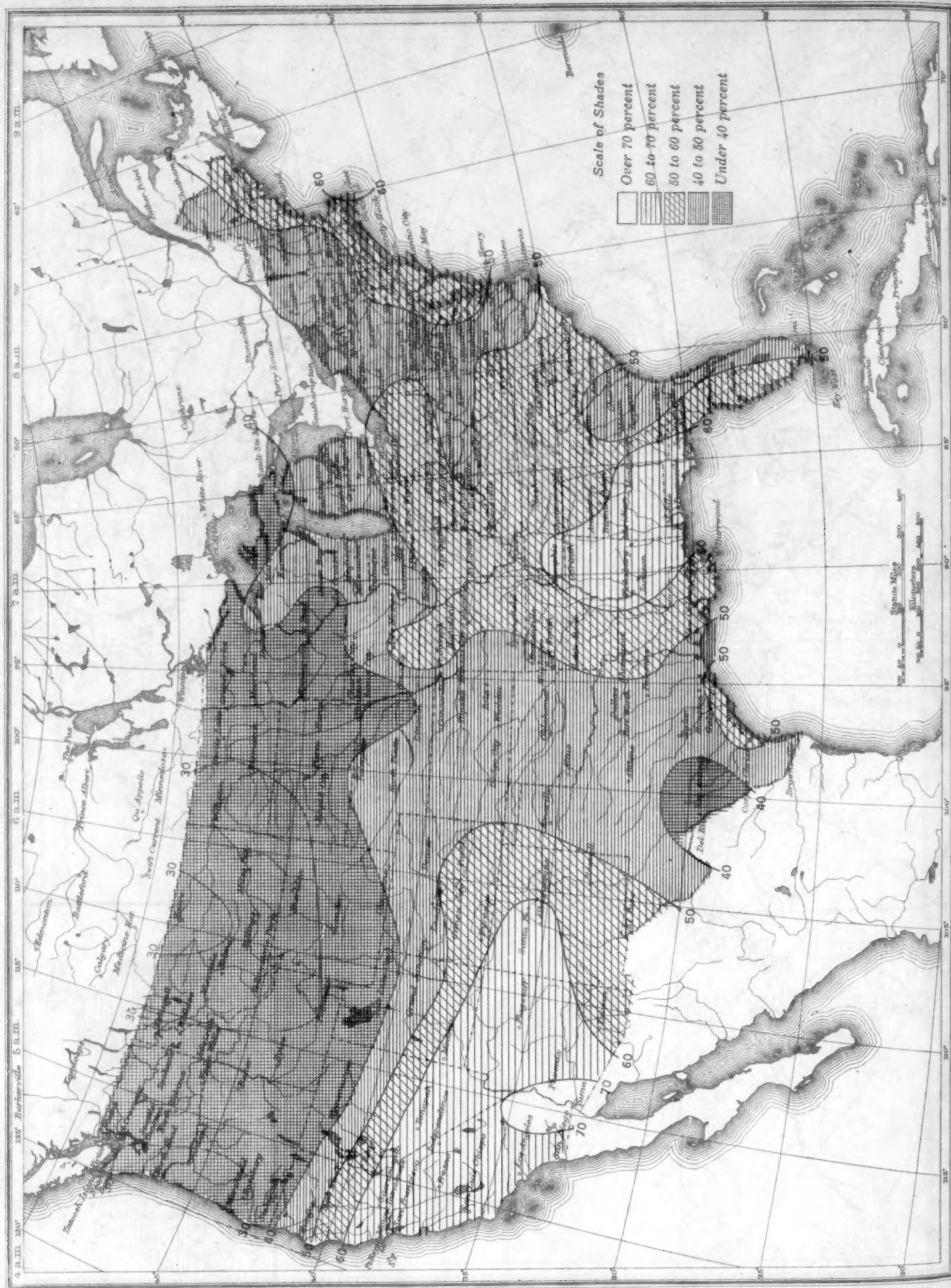


Chart V. Total Precipitation, Inches, October 1946. (Inset) Departure of Precipitation from Normal

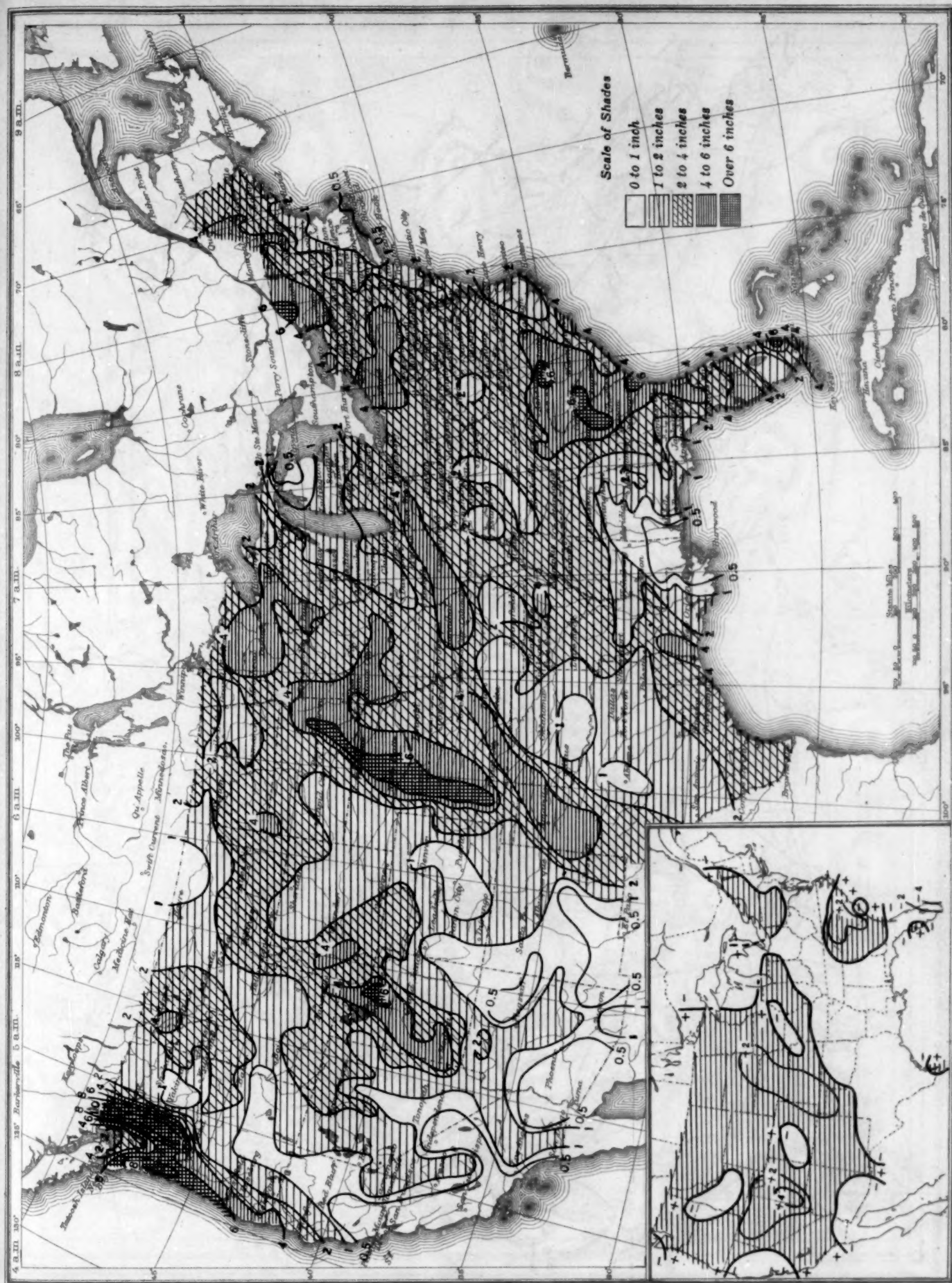


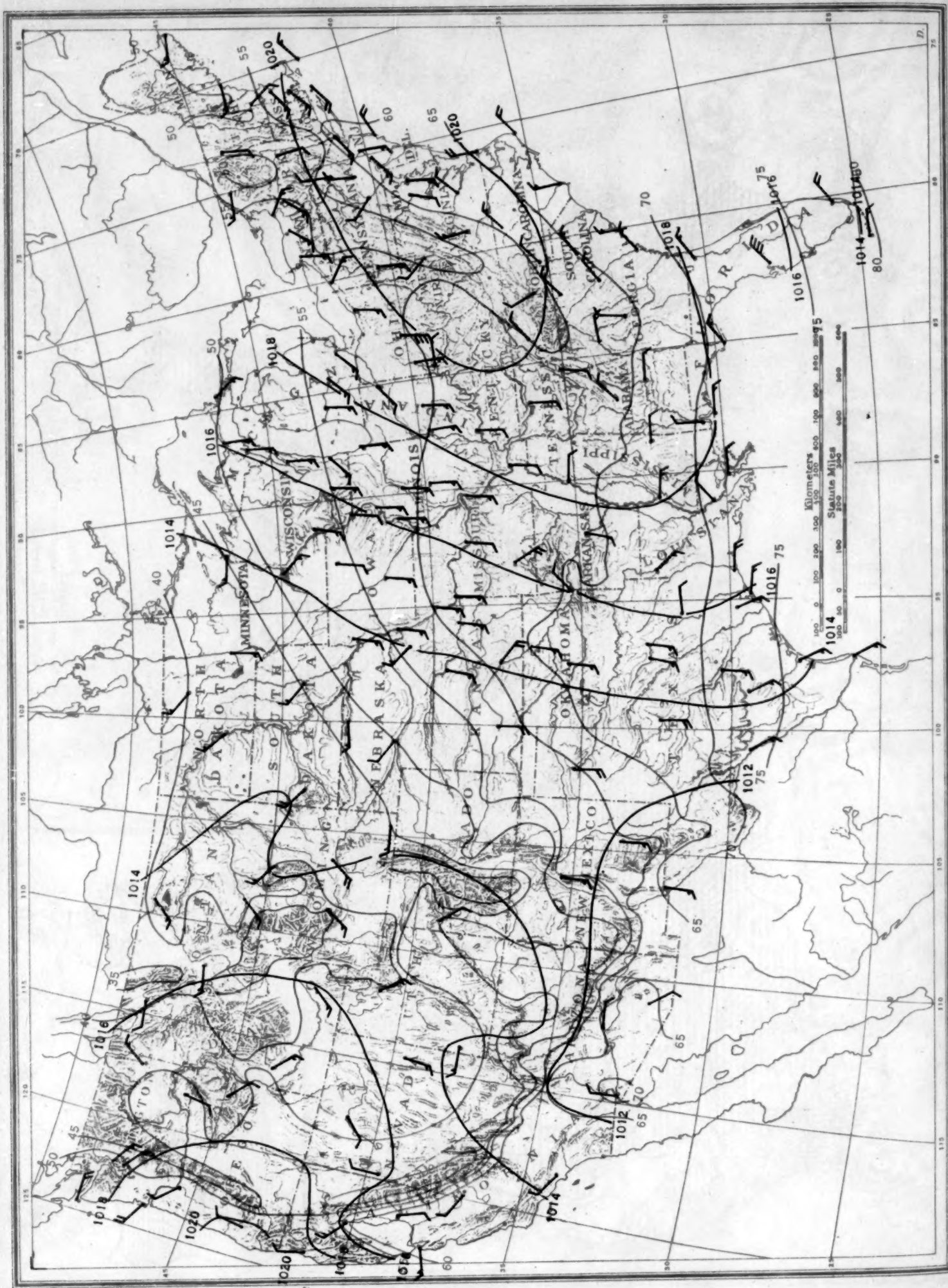
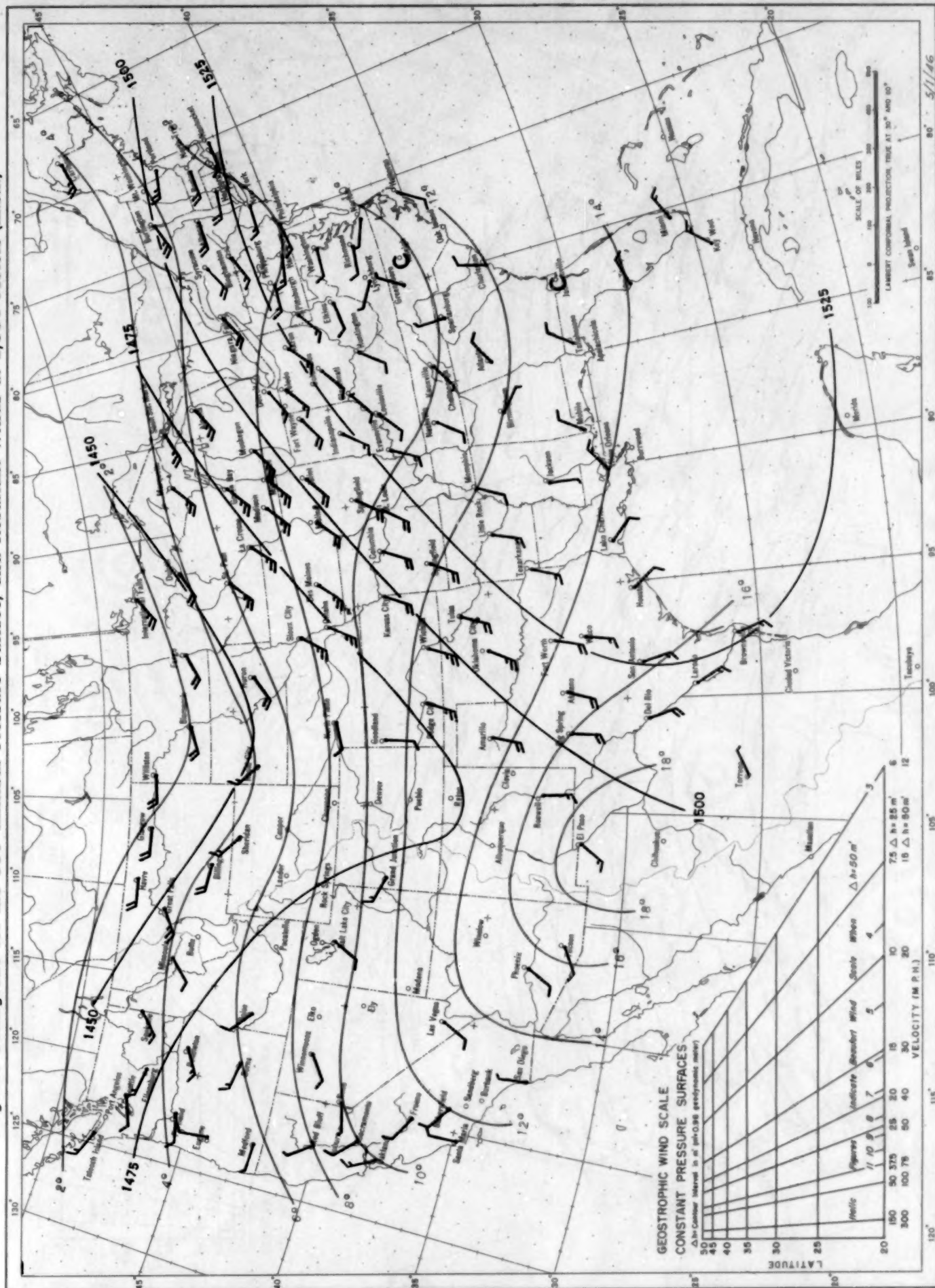
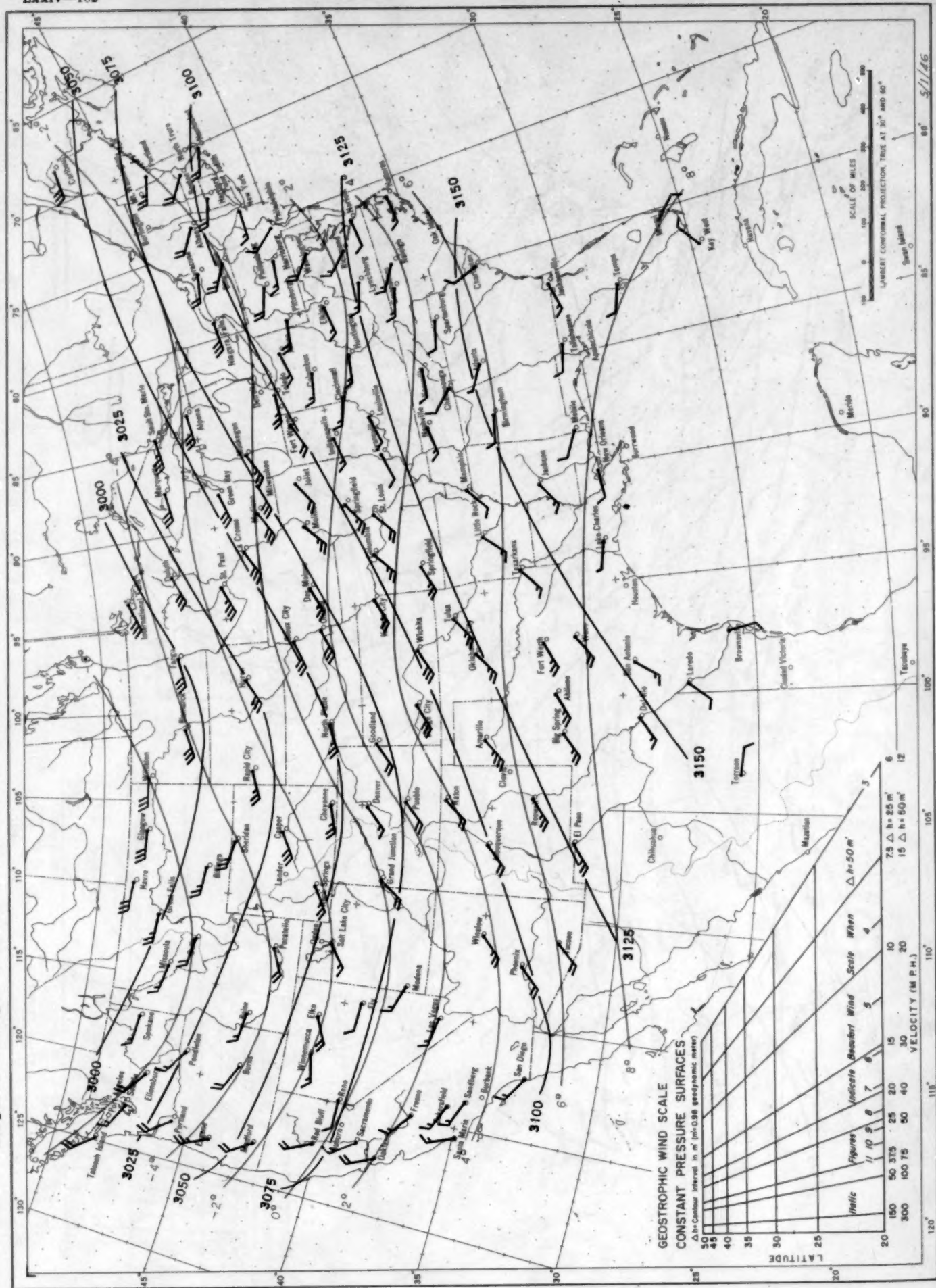
Chart VI. Isobars (mb.), at Sea Level and Isotherms ($^{\circ}$ F.) at Surface; Prevailing Winds, October 1946

Chart VIII, October 1946. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meter and Isotherms in Degrees Centigrade for the 850-millibar Pressure Surface, and Resultant Winds at 1,500 Meters (m.s.l.)



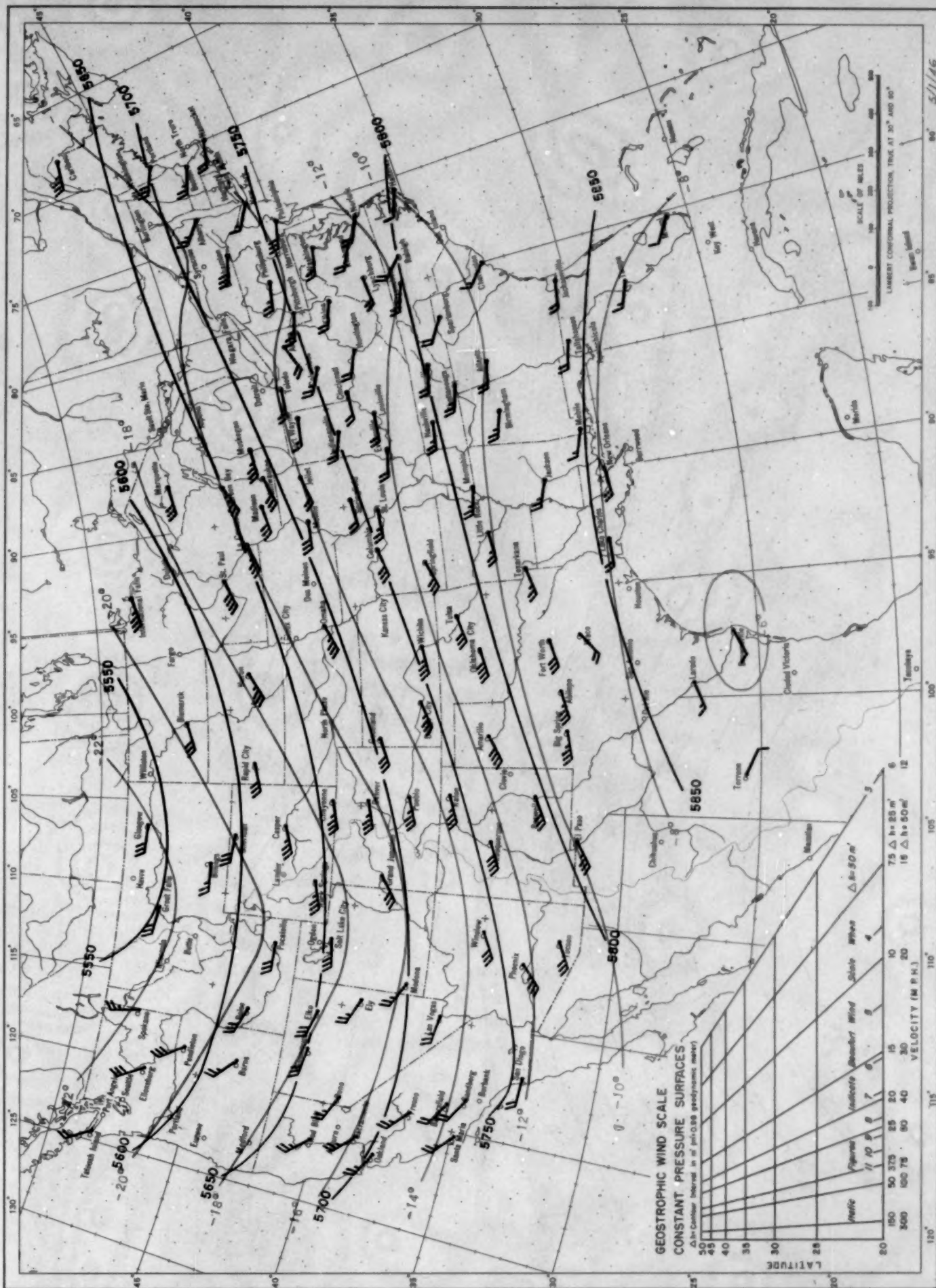
Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart IX, October 1946. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meter and Isotherms in Degrees Centigrade for the 700-millibar Pressure Surface, and Resultant Winds at 3,000 Meters (m.s.l.)



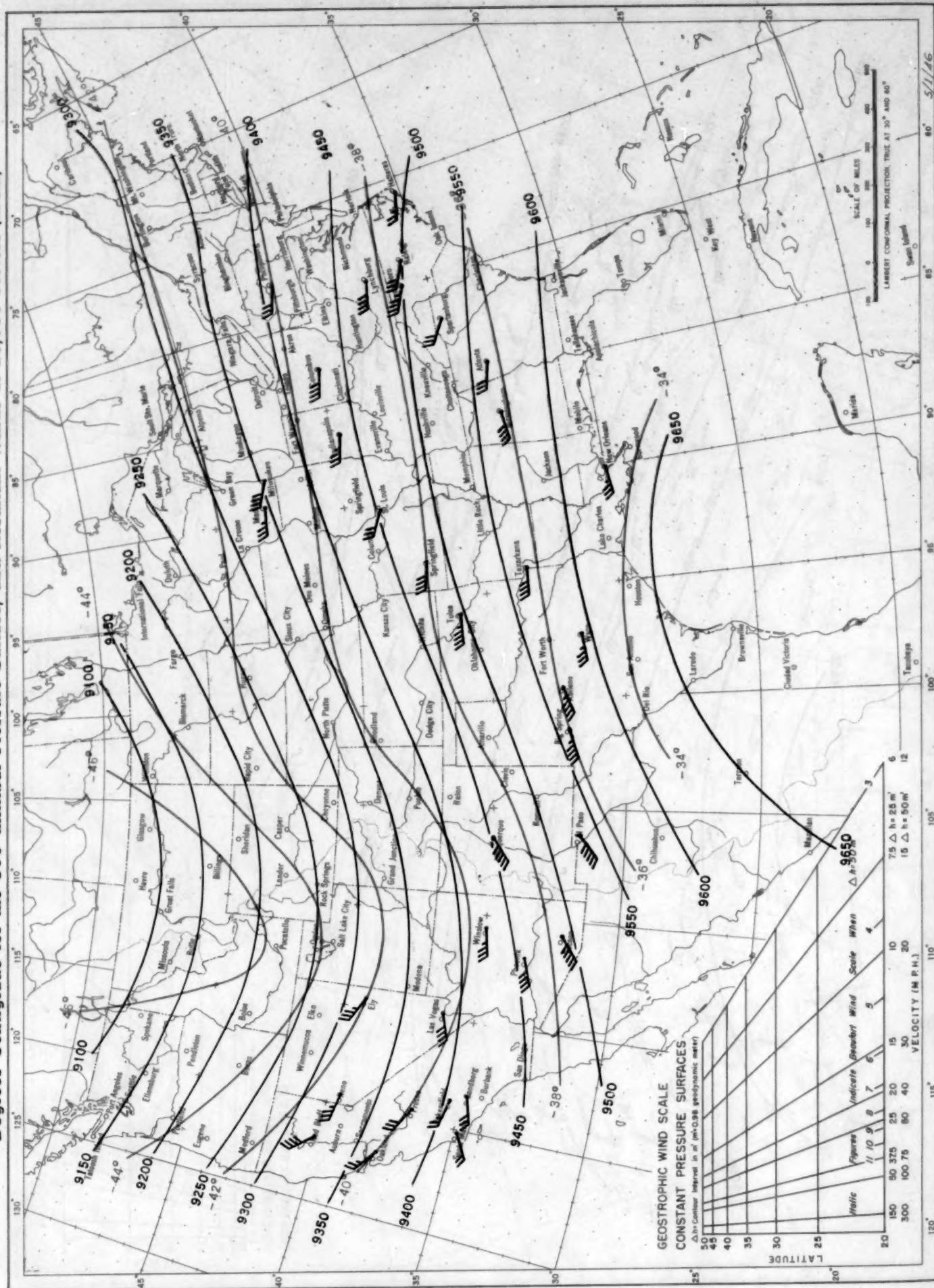
Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart X, October 1946. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meter and Isotherms in Degrees Centigrade for the 500-millibar Pressure Surface, and Resultant Winds at 5,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart XI, October 1946. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meter and Isotherms in Degrees Centigrade for the 300-millibar Pressure Surface, and Resultant Winds at 10,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.